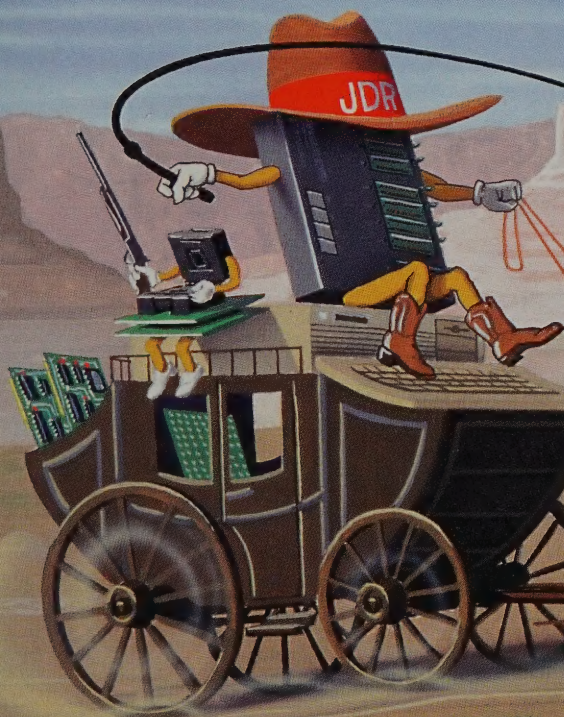


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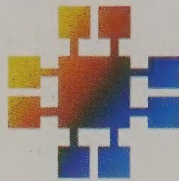
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Jeffrey D. Rose
President

Dear Electronics Enthusiast,

I am pleased to introduce the newest member of the JDR catalog family, our Components Edition. A quick glance inside will reveal to you our largest selection of IC's, components, prototyping products and developer's tools. In an era of fewer components companies and fewer choices, I'm sure you'll find this catalog a refreshing change!

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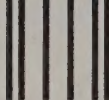
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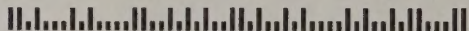
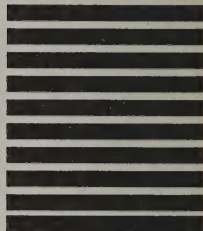
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INTEGRATED CIRCUITS

7400 SERIES

- Improved noise margin and device speed
- Active pull-up output for low driving source impedance
- Typical power dissipation: 10mW per gate

Part #	# Pins	Description	Price
7400	14	Quad 2-input NAND gates	.29
7401	14	Quad 2-input NAND gates with O/C	.29
7402	14	Quad 2-input NOR gates	.29
7403	14	Quad 2-input NAND gates with O/C	.29
7404	14	Hex inverters	.35
7405	14	Hex inverter with O/C	.35
7406	14	Hex inverter buffer/driver	.35
7407	14	Hex buffer/driver with O/C	.35
7408	14	Quad 2-input AND gates	.29
7409	14	Quad 2-input AND gate with O/C	.35
7410	14	Triple 3-input NAND gates	.29
7411	14	Triple 3-input AND gates	.29
7412	14	Triple 3-input NAND gates with O/C	.29
7413	14	Dual 4-input NAND Schmitt triggers	.35
7414	14	Hex inverter Schmitt triggers	.35
7416	14	Hex inverter buffer/driver	.35
7417	14	Hex buffer/driver	.35
7420	14	Dual 4-input NAND gates	.35
7422	14	Dual 4-input NAND gates	.49
7423	16	Dual 4-input NOR gate with strobe	.49
7425	14	Dual 4-input NOR gate with strobe	.35
7426	14	Quad 2-input NAND gate with O/C	.35
7427	14	Triple 3-input NOR gates	.35
7428	14	Quad 2-input NOR buffers	.49
7430	14	8-input NAND gates	.29
7432	14	Quad 2-input OR gates	.35
7433	14	Quad 2-input NOR buffers	.49
7437	14	Quad 2-input NAND buffers	.29
7438	14	Quad 2-input NAND buffers O/C	.35
7439	14	Quad 2-input NAND buffers O/C	.79
7440	14	Dual 4-input NAND buffers	.29
7442	16	BCD-to-decimal decoders	.49
7445	16	BCD-to-decimal decoder/driver	.69
7446	16	BCD-to-7 segment decoder/driver	1.19
7447	16	BCD-to-7 segment decoder/driver	.85
7448	16	BCD-to-7 segment decoder	2.29
7450	14	Dual 2-input AND-OR-INVERT gate	.29
7451	14	Dual 2-input AND-OR-INVERT gate	.29
7453	14	Exp. 2-Input AND-OR-INVERT gate	.29
7454	14	2-input AND-OR-INVERT gate	.29
7460	14	Dual 4-input expander	.29
7470	14	Gated edge-triggered JK flip-flop	.99
7472	14	JK Pulse-triggered flip-flop	1.29
7473	14	Dual JK flip-flop with clear	.49
7474	14	Dual D type flip-flop with preset & clear	.39
7475	16	4-bit bistable latch	.39
7476	16	Dual JK flip-flop	.59
7480	14	Gated full adder	.69
7483	14	4-bit full adder	.59
7485	16	4-bit magnitude comparator	.45
7486	14	Quad 2-input XOR gate	.39
7489	16	64-bit RAM open collector	2.79
7490	14	Decade counter	.59
7491	14	8-bit shift register	.59
7492	14	Divide by 12 counter	.69
7493	14	4-bit binary ripple counter	.45
7495	14	4-bit shift register	.39
7496	16	5-bit shift register	.59
7497	16	6-bit binary rate mult	1.95
74107	14	Dual JK flip-flop	.29
74109	16	Dual JK positive flip-flop	.29
74116	24	Dual 4-bit with clear latch	1.49
74120	16	Dual pulse sync/driver	1.19
74121	14	Monostable multivibrator	.49
74122	14	Retrig monostable multivibrator	.89
74123	16	Dual retriggerable MS multivibrator	.49
74125	14	Quad 3-state buffer	.49
74126	14	Quad 3-state buffer	.49
74128	14	Quad 2-input NOR buffer	.69
74132	14	Quad 2-input NAND Schmitt trigger	.49
74136	14	Quad 2-input XOR gate open coll.	.49
74145	16	BCD To decimal decoder/driver	.85
74147	16	10 to 4 priority encoder	1.99
74148	16	8-input priority encoder	.99
74150	24	16-input multiplexer	1.29

7400 SERIES

Part #	# Pins	Description	Price
74151	16	8-input multiplexer	.39
74153	16	Dual 4-1 multiplexer	.39
74154	24	1 to 16 decoder/demux	1.25
74155	16	Dual 2-4 decoder/demux	.49
74156	16	Dual 2-4 decoder/demux O/C	.49
74157	16	Quad 2-input select/mux non-in	.45
74159	24	1 of 16 decoder/demux open collector	1.75
74160	16	BCD decade counter	.79
74161	16	4-bit binary counter	.49
74162	16	BCD decade counter	.79
74163	16	4-bit binary counter	.69
74164	14	8-bit serial-in, parallel-out shift register	.69
74165	16	8-bit serial/parallel-in, serial-out shift reg	.79
74166	16	8-bit serial/parallel-in, serial-out shift reg	.79
74167	16	Sync decade rate multiplier	2.95
74170	16	4 x 4 register file	1.29
74172	24	16-bit mult port register file	5.95
74173	16	Quad D flip-flop with 3-state out	.79
74174	16	Hex D flip-flop	.49
74175	16	Quad D flip-flop	.49
74176	14	35MHz decade/binary counter	.89
74177	14	35MHz decade/binary counter	.59
74180	14	9-bit odd/even parity generator	.79
74190	16	BCD/decade up/down counter	1.19
74191	16	4-bit binary up/down counter	.85
74192	16	BCD decade up/down counter	.89
74193	16	4-bit bin up/down counter	.89
74194	16	4-bit bi-directional universal shift reg	1.19
74195	16	4-bit par-access shift register	.75
74196	14	Decade ripple counter	.89
74197	14	Presettable binary counter	.75
74198	24	8-bit bi-directional universal shift reg	1.69
74199	24	8-bit par-access shift register	.99
74221	16	Dual monostable multivibrator	.45
74246	16	BCD to 7 segment decoder/driver	4.95
74247	16	BCD to 7 segment decoder/driver	4.95
74249	16	BCD to 7 segment decoder/driver	4.95
74251	16	8-input multiplexer 3-state	.89
74259	16	8-bit addressable latch	1.49
74265	16	Quad comp-out element	.99
74273	20	Octal D flip-flop	2.59
74276	20	Quad JK flip-flop	1.29
74278	14	4-bit priority register	1.95
74279	16	Quad set-reset latch	.49
74283	16	4-bit full adder	.85
74284	16	4 x 4 par binary multiplier	2.95
74285	16	4 x 4 par binary multiplier	2.49
74290	14	Decade counter	.89
74293	14	4-bit binary ripple counter	1.89
74298	16	Quad 2-port register	.65
74365	16	Hex buffer/driver 3-state	.59
74366	16	Hex inverter/buffer 3-state	.59
74367	16	Hex buffer/driver 3-state	.39
74368	16	Hex inverter/buffer 3-state	.45
74376	16	Quad JK flip-flop	1.49
74390	16	Dual decade ripple counter	1.29
74393	14	Dual 4-bit bin ripple counter	.95
74425	14	Quad gate 3-state	1.49
74490	16	Dual BCD decade rip counter	4.95

74S SERIES

- Higher switching speeds than standard TTL
- Average propagation delay of 5ns
- Typical power dissipation: 20mW per gate

Part #	# Pins	Description	Price
74S00	14	Quad 2-input NAND gates	.29
74S02	14	Quad 2-input NOR gates	.29
74S03	14	Quad 2-input NAND gates with O/C	.29
74S04	14	Hex inverters	.29
74S05	14	Hex inverter with O/C	.29
74S08	14	Quad 2-input AND gates	.29
74S09	14	Quad 2-input AND gate with O/C	.39
74S10	14	Triple 3-input NAND gates	.19
74S11	14	Triple 3-input AND gates	.19
74S15	14	Triple 3-input AND gates O/C	.39
74S20	14	Dual 4-input NAND gates	.29

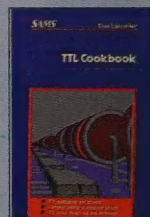
74S SERIES

Part #	# Pins	Description	Price
74S22	14	Dual 4-input NAND gates O/C	.19
74S30	14	8-input NAND gates	.29
74S32	14	Quad 2-input OR gates	.35
74S37	14	Quad 2-input NAND buffers	.19
74S38	14	Quad 2-input NAND buffers O/C	.29
74S51	14	Dual 2-input AND-OR-INVERT gate	.35
74S64	14	4-2-3-2-input AND-OR-INVERT gate	.29
74S74	14	Dual D type flip-flop with preset & clear	.29
74S85	16	4-bit magnitude comparator	.49
74S86	14	Quad 2-input XOR Gate	.19
74S112	16	Dual JK edge-trigger flip-flop	.49
74S113	14	Dual JK edge-trigger flip-flop, w/ PRESET	.29
74S124	16	Dual voltage controlled oscillator	1.19
74S132	14	Quad 2-input NAND Schmitt trigger	.29
74S133	16	13-input NAND gate	.25
74S134	16	12-input NAND gate 3-state	.39
74S135	16	Quad XOR/NOR gate	.39
74S138	16	1 of 8 decoder/demultiplexor	.35
74S139	16	Dual 2/4-line decoder/demultiplexor	.35
74S140	14	Dual 4-input NAND 50 ohm drive	.49
74S151	16	8-input multiplexer	.29
74S153	16	Dual 4-1 multiplexer	.29
74S157	16	Quad 2-input multiplexer	.49
74S158	16	Quad 2-1 mux inv out	.95
74S161	16	4-bit binary counter	.89
74S163	16	4-bit binary counter	.45
74S169	16	4 bit up/down sync counter	1.95
74S174	16	Hex D flip-flop	.39
74S175	16	Quad D flip-flop	.29
74S181	24	4-bit arithmetic logic unit	1.95
74S182	16	Lookahead carry generator	.99
74S188	16	256-bit PROM (TBP18SA030)	1.89
74S189	16	16 x 4 static RAM	1.69
74S194	16	4-bit bi-direct universal shift reg	.49
74S195	16	4-bit par-access shift register	.49
74S196	14	Decade ripple counter	.89
74S197	14	4-bit binary ripple counter	.59
74S201	16	256-bit RAM 3-state	2.49
74S225	20	Async FIFO memory 16 x 5-bit	1.95
74S240	20	Octal inverter buffer 3-state	.59
74S241	20	Octal buffer 3-state non-in	.59
74S244	20	Octal buffer 3-state	.59
74S251	16	8-input multiplexer 3-state	.49
74S253	16	Dual 4-input mux 3-state	.79
74S257	16	Quad 2-input mux 3-state	.29
74S258	16	Quad 2/1 mux 3-state	.39
74S260	14	Dual 5-input NOR gate	.59
74S273	29	Octal D flip-flop	1.99
74S280	16	9-bit odd/even parity generator	.39
74S283	16	4-bit full adder	.99
74S287	16	1024-bit PROM (6301)	1.69
74S288	16	256-bit PROM (TBP18S030N)	1.69
74S289	16	64-bit RAM open collector	1.99
74S299	20	8-bit universal shift register	1.39
74S301	16	256-bit RAM open collector	2.49
74S373	20	Octal transparent latch	.49
74S374	20	Octal D flip-flop 3-state	.59
74S381	20	ALU/function generator	2.95
74S387	16	1024-bit PROM open collector	1.59
74S399	16	Quad 2-port register	.99
74S412	24	Multi-mode buffer 8-bit latch	2.95
74S472	20	512 x 8 PROM 3-state	2.89
74S474	24	512 x 8 PROM 3-state	4.95
74S571	16	512 x 4 PROM 3-state	2.95
74S573	18	1K x 4 PROM 3-state	2.49

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74LS SERIES

- Better circuit performance than standard TTL
- Achieves a five-fold reduction in current and power
- Typical power dissipation: 2mW per gate

Part #	# Pins	Description	Price
74LS00	14	Quad 2-input NAND gates	.25
74LS01	14	Quad 2-input NAND gates with O/C	.25
74LS02	14	Quad 2-input NOR gates	.25
74LS03	14	Quad 2-input NAND gates with O/C	.25
74LS04	14	Hex inverters	.25
74LS05	14	Hex inverter with O/C	.25
74LS06	14	Hex inverter buffer/driver	.49
74LS07	14	Hex buffer/driver with O/C	.49
74LS08	14	Quad 2-input AND gates	.25
74LS09	14	Quad 2-input AND gate with O/C	.25
74LS10	14	Triple 3-input NAND gates	.25
74LS11	14	Triple 3-input AND gates	.29
74LS12	14	Triple 3-input NAND gates with O/C	.29
74LS13	14	Dual 4-input NAND Schmitt triggers	.35
74LS14	14	Hex inverter Schmitt triggers	.39
74LS15	14	Triple 3-input AND gates	.35
74LS20	14	Dual 4-input NAND gates	.25
74LS21	14	Dual 4-input AND gates	.29
74LS22	14	Dual 4-input NAND gates	.29
74LS26	14	Quad 2-input NAND gates with O/C	.29
74LS27	14	Triple 3-input NOR gates	.29
74LS28	14	Quad 2-input NOR buffers	.39
74LS30	14	8-input NAND gates	.25
74LS32	14	Quad 2-input OR gates	.25
74LS33	14	Quad 2-input NOR buffers	.35
74LS37	14	Quad 2-input NAND buffers	.29
74LS38	14	Quad 2-input NAND buffers with O/C	.29
74LS40	14	Dual 4-input NAND buffers	.29
74LS42	16	BCD-to-decimal decoders	.39
74LS47	16	BCD-to-7 segment decoder/driver	.75
74LS48	16	BCD-to-7 segment decoder	.75
74LS49	16	BCD-to-7 segment decoder/driver	2.49
74LS51	14	Dual 2-input AND-OR-INVERT gate	.25
74LS54	14	2-input AND-OR-INVERT gate	.29
74LS55	14	Exp 2-wide 4-input AND-OR-INVERT	.29
74LS63	14	Hex current sense int gate	.79
74LS73	14	Dual JK flip-flop with clear	.39
74LS74	14	Dual D type flip-flop with preset & clear	.29
74LS75	16	4-bit bistable latch	.29
74LS76	16	Dual JK flip-flop	.39
74LS78	14	Dual JK edge flip-flop	.49
74LS83	14	4-bit full adder	.49
74LS85	16	4-bit magnitude comparator	.49
74LS86	14	Quad 2-input XOR gate	.29
74LS90	14	Decade counter	.39
74LS91	14	8-bit shift register	.59
74LS92	14	Divide by 12 counter	.59
74LS93	14	4-bit binary ripple counter	.39
74LS95	14	4-bit shift register	.49
74LS96	16	5-bit shift register	.49
74LS107	14	Dual JK flip-flop	.39
74LS109	16	Dual JK positive flip-flop	.39
74LS112	16	Dual JK edge trigger flip-flop	.39
74LS113	14	Dual JK edge trigger flip-flop, w/ PRESET	.39
74LS114	14	Dual JK edge trigger flip-flop	.39
74LS122	14	Retrig MS multivibrator	.49
74LS123	16	Dual Retrig MS multivibrator	.39
74LS124	16	Dual voltage controlled oscillator	2.49
74LS125	14	Quad 3-state buffer	.39
74LS126	14	Quad 3-state buffer	.39
74LS132	14	Quad 2-input NAND Schmitt trigger	.39
74LS133	16	13 input NAND gate	.49
74LS136	14	Quad 2-in XOR gate open collector	.39
74LS137	16	3 to 8 line decoder/demux	.49
74LS138	16	1 of 8 decoder/demultiplex	.39
74LS139	16	Dual 2/4 line decoder/demultiplex	.39
74LS145	16	BCD to decimal decoder/driver	.59
74LS147	16	10 to 4 priority encoder	1.49
74LS148	16	8-input priority encoder	.59
74LS151	16	8-input multiplexer	.39
74LS153	16	Dual 4-1 multiplexer	.39
74LS154	24	1 of 16 decoder/demux	1.15
74LS155	16	Dual 2-4 decoder/demux	.49
74LS156	16	Dual 2-4 decoder/demux OC	.49
74LS157	16	Quad 2-input select/mux non-in	.39

74LS SERIES

Part #	# Pins	Description	Price
74LS158	16	Quad 2-1 mux inv out	.29
74LS160	16	BCD decade counter	.29
74LS161	16	4-bit binary counter	.39
74LS162	16	BCD decade counter	.49
74LS163	16	4-bit binary counter	.49
74LS164	14	8-bit serial-in, parallel-out shift register	.49
74LS165	16	8-bit ser./par.-in, ser.-out shift reg	.59
74LS166	16	8-bit ser./par.-in, ser.-out shift reg	.59
74LS168	16	4-bit up/down sync decade counter	.89
74LS169	16	4-bit up/down sync binary counter	.89
74LS170	16	4 x 4 register file	.59
74LS173	16	Quad D flip-flop with 3-state out	.39
74LS174	16	Hex D flip-flop	.39
74LS175	16	Quad D flip-flop	.39
74LS181	24	4-bit arithmetic logic unit	1.99
74LS189	16	16 x 4 static RAM	4.95
74LS190	16	BCD/decade up/down counter	.49
74LS191	16	4-bit binary up/down counter	.49
74LS192	16	BCD decade up/down counter	.59
74LS193	16	4-bit bin up/down counter	.59
74LS194	16	4-bit bi-direct universal shift reg	.59
74LS195	16	4-bit par-access shift re	.59
74LS196	14	Decade ripple counter	.49
74LS197	14	4-bit binary ripple counter	.49
74LS221	16	Dual MS multivibrator	.59
74LS240	20	Octal inverter buffer 3-state	.49
74LS241	20	Octal buffer 3-state	.55
74LS242	14	Quad invert transceiver	.59
74LS243	14	Quad transceiver 3-state	.59
74LS244	20	Octal buffer 3-state	.69
74LS245	20	Octal transceiver 3-state	.69
74LS247	16	BCD to 7 segment decoder/driver	.69
74LS248	16	BCD to 7 segment decoder/driver	.69
74LS249	16	BCD to 7 segment decoder/driver	1.19
74LS251	16	8-input multiplexer 3-state	.49
74LS253	16	Dual 4-input mux 3-state	.49
74LS256	16	Dual 4-bit addressable latch	.89
74LS257	16	Quad 2-input mux 3-state	.39
74LS258	16	Quad 2/1 mux 3-state	.49
74LS259	16	8-bit addressable latch	.59
74LS260	14	Dual 5-input NOR gate	.49
74LS266	14	Quad 2-input XNOR gate open collector	.39
74LS273	20	Octal D flip-flop	.69
74LS275	16	4 x 4-bit binary multiplier	1.99
74LS279	16	Quad set-reset latch	.39
74LS280	16	9-bit odd/even parity generator	.89
74LS283	16	4-bit full adder	.59
74LS290	14	Decade counter	.59
74LS293	14	4-bit binary ripple counter	.59
74LS295	14	4-bit shift register 3-state	.99
74LS298	16	Quad 2-port register	.69
74LS299	20	8-bit universal shift register	1.49
74LS322	20	8-bit shift register (AM25LS22)	1.49
74LS323	20	8-bit universal shift register	1.49
74LS324	14	Voltage controlled OSC	1.99
74LS348	16	8 to 3 priority register	.89
74LS353	16	Dual 4-bit mux inv-out	.89

74LS573 OCTAL D TYPE LATCH

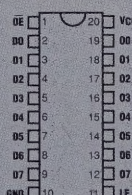
High-speed octal latch has a buffered common Latch Enable (LE) and buffered common Output Enable (OE) inputs. Functionally identical to the 74LS373, but with different pinouts.

- Inputs and outputs on opposite sides of package for easy interface with microprocessors

- Use as input or output port for microprocessors; input clamp diodes limit high-speed termination effects

- 3-State outputs

74LS573 \$1.29



74LS SERIES

Part #	# Pins	Description	Price
74LS365	16	Hex buffer/driver 3-state	.39
74LS366	16	Hex inverter/buffer 3-state	.39
74LS367	16	Hex buffer/driver 3-state	.39
74LS368	16	Hex inverter/buffer 3-state	.39
74LS373	20	Octal transparent latch	.65
74LS374	20	Octal D flip-flop 3-state	.65
74LS375	16	4-bit bisettable latch	.89
74LS377	20	Octal D flip-flop w/clock enable	.79
74LS378	16	Hex D flip-flop w/clock enable	.89
74LS379	16	Quad D flip-flop w/clock enable	.89
74LS385	20	Quad serial add/sub	1.99
74LS386	14	Quad 2-input XOR gate	.49
74LS390	16	Dual decade ripple counter	.79
74LS393	14	Dual 4-bit binary ripple counter	.69
74LS395	16	4-bit cascade shift reg 3-state	.79
74LS396	16	Octal storage register	.79
74LS399	16	Quad 2-port register	.79
74LS424	20	Quad bus transceiver	3.99
74LS490	16	Dual BCD decade rip co	.99
74LS540	20	Octal inverter buffer 3-state	.89
74LS541	20	Octal non-inverting buffer	.89
74LS573	20	Octal D type latch	1.29
74LS574	20	Octal D type flip flop	1.29
74LS590	16	8-bit binary counter 3-state	4.95
74LS624	14	Volt cont oscillator	1.99
74LS629	16	Dual volt control OSC	2.49
74LS640	20	Octal bus transceiver 3-state	.99
74LS645	20	Octal bus transceiver 3-state	.99
74LS646	24	Octal trans./reg. 3-state (.3" wide)	2.29
74LS668	16	Synch. up/down decade counter	1.19
74LS669	16	Synch. up/down binary counter	.89
74LS670	16	4 x 4 register file 3-state	.89
74LS682	20	8-bit comparator	1.99
74LS684	20	8-bit comparator	1.49
74LS685	20	8-bit comparator	7.95
74LS688	20	8-bit comparator (AM25LS2521)	1.99
74LS689	20	8-bit comparator	3.20
74LS783	40	Synchronous address multiplexer	22.95
25LS2518	16	Quad D latch	.99
25LS2521	20	8-bit comparator (74LS688)	1.99
25LS2538	20	1 of 8 decoder 3-state	1.95
25LS2569	20	4-bit up/down binary counter 3-state	1.29
81LS95	16	Hex buffer 3-state (4503)	.99
81LS96	16	3-state hex inverter	1.49
81LS97	16	3-state hex buffer	1.49
81LS98	16	3-state hex inverter	.99

74F SERIES

- 30% faster than Schottky
- 75% less power consumption than Schottky
- Pin and function compatible with LS

Part #	# Pins	Description	Price
74F00	14	Quad 2-input NAND gates	.29
74F02	14	Quad 2-input NOR gates	.29
74F04	14	Hex inverters	.29
74F08	14	Quad 2-input AND gates	.29
74F10	14	Triple 3-input NAND gates	.29
74F32	14	Quad 2-input OR gates	.29
74F64	14	4-2-3-2-input AND-OR-INVERT gate	.49
74F74	14	Dual D type flip-flop with preset & clear	.29
74F86	14	Quad 2-input XOR gate	.39
74F109	16	Dual JK positive flip-flop	.59
74F138	16	1 of 8 decoder/demultiplex	.59
74F139	16	Dual 2/4 line decoder/demultiplexor	.59
74F153	16	Dual 4-1 multiplexer	.59
74F157	16	Quad 2-input select/mux non-in	.69
74F240	20	Octal inverter buffer 3-state	.69
74F244	20	Octal buffer 3-State	.69
74F245	20	Octal transceiver 3-state	.69
74F251	16	8-input multiplexer 3-state	.69
74F253	16	Dual 4-input mux 3-state	.69
74F257	16	Quad 2-input mux 3-state	.69
74F280	16	9-bit odd/even parity generator	.89
74F283	16	4-bit full adder	1.19
74F373	20	Octal transparent latch	.79
74F374	20	Octal D flip-flop 3-state	.79
74F521	20	Octal comparator	1.19

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

74HC SERIES

- Low power consumption
- High noise immunity
- Power dissipation capacitance: 20pf per gate

Part #	# Pins	Description	Price
74HC00	14	Quad 2-input NAND gates	.25
74HC02	14	Quad 2-input NOR gates	.25
74HC04	14	Hex inverters	.25
74HC08	14	Quad 2-input AND gates	.25
74HC10	14	Triple 3-input NAND gates	.25
74HC11	14	Triple 3-input AND gates	.29
74HC14	14	Hex inverter Schmitt triggers	.29
74HC20	14	Dual 4-input NAND gates	.25
74HC21	14	Dual 4-input AND gate	.49
74HC27	14	Triple 3-input NOR gates	.29
74HC30	14	8-input NAND gates	.29
74HC32	14	Quad 2-input OR gates	.29
74HC42	16	BCD-to-decimal decoder	.49
74HC51	14	Dual 2-input AND-OR-INVERT gate	.25
74HC74	14	Dual D type flip-flop with preset & clear	.29
74HC75	16	Dual 2-bit Trans Latch	.29
74HC85	16	4-bit magnitude comparator	.79
74HC86	14	Quad 2-input XOR gate	.35
74HC93	14	4-bit binary ripple counter	1.29
74HC107	14	Dual JK flip-flop	.39
74HC109	16	Dual JK positive flip-flop	.39
74HC112	16	Dual JK edge-trigger flip-flop	.39
74HC123	16	Dual retrigger. MS multivibrator	.45
74HC125	14	Quad 3-state buffer	.39
74HC132	14	Quad 2-input NAND Schmitt trigger	.49
74HC133	16	13-input NAND gate	.39
74HC138	16	1 of 8 decoder/demultiplex	.39
74HC139	16	Dual 2/4 line decoder/demultiplex	.39
74HC147	16	10 to 4 priority encoder	.79
74HC148	16	8-input priority encoder	.79
74HC151	16	8-input multiplexer	.49
74HC153	16	Dual 4-1 multiplexer	.39
74HC154	24	1 of 16 decoder/demux .3" wide	1.19
74HC157	16	Quad 2-input select/mux non-in	.49
74HC158	16	Quad 2-1 mux inv out	.39
74HC161	16	4-bit binary counter	.49
74HC163	16	4-bit binary counter	.49
74HC164	14	8-bit serial-in, parallel-out shift register	.49
74HC165	16	8-bit serial/parallel-in, serial-out shift reg.	.59
74HC166	16	8-bit serial/parallel-in, serial-out shift reg.	.69
74HC174	16	Hex D flip-flop	.49
74HC175	16	Quad D flip-flop	.49
74HC191	16	4-bit binary up/down counter	.79
74HC193	16	4-bit binary up/down counter	.69
74HC194	16	4-bit bi-direct. uni. shift reg.	.69
74HC195	16	4-bit par-access shift register	.69
74HC221	16	Dual MS multivibrator	.59
74HC238	16	3-8 decoder/demux	.79
74HC240	20	Octal inverter buffer 3-state	.59
74HC241	20	Octal buffer 3-state	.59
74HC242	14	Quad invert transceiver	.59
74HC243	14	Quad transceiver 3-state	.59
74HC244	20	Octal buffer 3-state	.59
74HC245	20	Octal transceiver 3-state	.59
74HC251	16	8-input multiplexer 3-state	.49
74HC253	16	Dual 4-input mux 3-state	.49
74HC257	16	Quad 2-input mux 3-state	.49
74HC259	16	8-bit addressable latch	.59
74HC273	20	Octal D flip-flop	.79
74HC299	20	8-bit universal shift register	1.29
74HC367	16	Hex buffer/driver 3-state	.59
74HC368	16	Hex inverter/buffer 3-state	.59
74HC373	20	Octal transparent latch	.59
74HC374	20	Octal D flip-flop 3-state	.59
74HC390	16	Dual decade ripple counter	.59
74HC393	14	Dual 4-bit binary ripple counter	.59
74HC541	20	Octal non-inverting buffer	.79
74HC573	20	Octal D type latch	1.29
74HC574	20	Octal D type flip-flop	1.29
74HC595	16	8-bit serial to parallel shift reg.	1.19
74HC688	20	8-bit magnitude comparator	.95
74HC4017	16	Decade counter/divider	.89
74HC4020	16	14-stage ripple carry counter	.79
74HC4024	14	7-stage ripple carry counter	.89
74HC4040	16	12-stage ripple carry counter	.79

74HC SERIES

Part #	# Pins	Description	Price
74HC4046	16	Phase lock loop	.95
74HC4049	16	Hex inverting buffer	.59
74HC4050	16	Hex non-inverting buffer	.59
74HC4051	16	8-channel analog mux/demux	1.19
74HC4060	16	14-stage ripple carry counter	.79
74HC4066	14	Quad analog switch	.59
74HC4075	14	Triple 3-input OR gate	.39
74HC4511	16	BCD to 7-segment latch/decoder	1.99
74HC4538	16	Dual MS multivibrator	.89
74HC22106	28	8-point crosspoint switch	6.95

NATIONAL CMOS LOGIC

This book contains technical information and application notes on National's 54HC/74HC, 54HCT/74HCT, 54C/74C and CD4000 series.



400039 3 lbs 1453 pages, 1988 \$19.95

74HCT SERIES

- Subgroup of the high-speed CMOS family
- Inputs provide for TTL level translation to CMOS
- Pin and function compatible with LS

Part #	# Pins	Description	Price
74HCT00	14	Quad 2-input NAND gates	.25
74HCT02	14	Quad 2-input NOR gates	.25
74HCT04	14	Hex inverters	.25
74HCT08	14	Quad 2-input AND gates	.25
74HCT10	14	Triple 3-input NAND gates	.25
74HCT11	14	Triple 3-input AND gates	.35
74HCT20	14	Dual 4-input NAND gates	.25
74HCT27	14	Triple 3-input NOR gates	.25
74HCT32	14	Quad 2-input OR gates	.29
74HCT73	14	Dual JK flip-flop with clear	.29
74HCT74	14	Dual D type flip-flop with preset & clear	.35
74HCT75	16	Dual 2-bit trans latch	.35
74HCT86	14	Quad 2-input XOR gate	.29
74HCT123	16	Dual retrigger. MS multivibrator	.65
74HCT125	14	Quad buffer 3-state	.49
74HCT138	16	1 of 8 decoder/demultiplex	.49
74HCT139	16	Dual 2/4 line decoder/demultiplex	.49
74HCT151	16	8-input multiplexer	.49
74HCT154	24	1 of 16 decoder/demux	1.89
74HCT157	16	Quad 2-input select/mux non-in	.49
74HCT158	16	Quad 2-1 mux inv out	.49
74HCT161	16	4-bit binary counter	.69
74HCT164	14	8-bit serial-in, parallel-out shift register	.69
74HCT165	16	8-bit serial/parallel-in, serial-out shift reg.	.69
74HCT166	16	8-bit serial/parallel-in, serial-out shift reg.	.69
74HCT174	16	Hex D flip-flop	.49
74HCT175	16	Quad D flip-flop	.49
74HCT191	16	4-bit binary up/down counter	.59
74HCT193	16	4-bit binary up/down counter	.69
74HCT194	16	4-bit bi-directional universal shift reg.	.69
74HCT195	16	4-bit par-access shift register	.69
74HCT238	16	3-8 decoder/demux	.69
74HCT240	20	Octal inverter buffer 3-state	.69
74HCT241	20	Octal buffer 3-state	.69
74HCT243	14	Quad transceiver 3-state	.69
74HCT244	20	Octal buffer 3-state	.69
74HCT245	20	Octal transceiver 3-state	.69
74HCT251	16	8-In multiplexer 3-state	.59
74HCT257	16	Quad 2-input mux 3-state	.59
74HCT259	16	8-bit addressable latch	.69
74HCT273	20	Octal D flip-flop	.69
74HCT299	20	8-bit universal shift register	.99
74HCT367	16	Hex buffer/driver 3-state	.59
74HCT368	16	Hex inverter buffer 3-state	.59
74HCT373	20	Octal transparent latch	.69
74HCT374	20	Octal D flip-flop 3-state	.69

74HCT SERIES

Part #	# Pins	Description	Price
74HCT393	14	Dual 4-bit binary ripple counter	.69
74HCT573	20	Octal D type latch	.79
74HCT574	20	Octal D type flip-flop	.79
74HCT4017	16	Decade counter/divider	.69
74HCT4020	16	14-stage ripple carry counter	.69
74HCT4040	16	12-stage ripple carry counter	.69
74HCT4060	16	14-stage ripple carry counter	.79
74HCT4538	16	Dual MS multivibrator	.89

74C SERIES

- Guaranteed noise margin
- Wide power supply range
- Power dissipation capacitance: 30pf per gate

Part #	# Pins	Description	Price
74C00	14	Quad 2-input NAND gates	.29
74C02	14	Quad 2-input NOR gates	.29
74C04	14	Hex inverters	.29
74C08	14	Quad 2-input AND gates	.29
74C10	14	Triple 3-input NAND gates	.39
74C14	14	Hex inverter Schmitt triggers	.59
74C20	14	Dual 4-input NAND gates	.29
74C30	14	8-input NAND gates	.39
74C32	14	Quad 2-input OR gates	.49
74C42	16	BCD-to-decimal decoders	1.99
74C48	16	BCD-to-7 segment decoder	2.95
74C73	14	Dual JK flip-flop with clear	1.19
74C74	14	Dual D type flip-flop with preset & clear	.99
74C76	16	Dual JK flip-flop	.99
74C85	16	4-bit magnitude comparator	1.49
74C86	14	Quad 2-input XOR gate	.59
74C89	16	64-bit RAM open collector	8.95
74C90	14	Decade counter	1.49
74C93	14	4-bit binary ripple counter	1.49
74C95	14	4-bit shift register	.99
74C107	14	Dual JK flip-flop	.99
74C150	24	16-input multiplexer	4.95
74C151	16	8-input multiplexer	2.95
74C154	24	1 of 16 decoder/demux	3.95
74C157	16	Quad 2-input select/mux non-in	1.99
74C160	16	BCD decade counter	1.49
74C161	16	4-bit binary counter	.99
74C162	16	BCD decade counter	1.49
74C163	16	4-bit binary counter	.99
74C164	14	8-bit serial-in, parallel-out shift register	1.49
74C165	16	8-bit serial/parallel-in, serial-out shift reg.	1.49
74C173	16	Quad D flip-flop with 3-state out	.79
74C174	16	Hex D flip-flop	.79
74C175	16	Quad D flip-flop	.79
74C192	16	BCD decade up/down counter	2.49
74C193	16	4-bit binary up/down counter	1.49
74C195	16	4-bit par-access shift register	1.49
74C221	16	Dual MS multivibrator	2.99
74C240	20	Octal inverter buffer 3-state	1.99
74C244	20	Octal buffer 3-state	1.99
74C373	20	Octal transparent latch	1.99
74C374	20	Octal D flip-flop 3-state	1.99
74C901	14	Hex inverting TTL buffer	.99
74C902	14	Hex non-invert TTL buffer	.99
74C903	14	Hex inverter buffer	.99
74C905	24	12-bit success. approx. reg.	6.95
74C906	14	Hex open drain N-Channel buffer	.99
74C907	14	Hex open drain P-Channel buffer	.99
74C908	8	Dual 30-volt driver	1.99
74C909	14	Quad comparator	3.95
74C911	28	4 digit expand display cont	12.95
74C912	18	6 digit BCD display driver	19.95
74C914	14	Hex Schmitt trigger	2.49
74C915	14	7 segment to BCD converter	2.49
74C917	28	6 digit hex display driver	9.95
74C918	14	Dual 30 volt driver	2.95
74C921	22	1024-bit static SG CMOS RAM	6.95
74C922	18	16 key encoder	5.95
74C923	20	20 key encoder	8.95
74C925	16	4 digit count mux 7 Seg	9.95
74C927	18	4 digit count mux 7 Seg	9.95
74C928	18	4 digit count mux 7 Seg	9.95

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

4000 SERIES

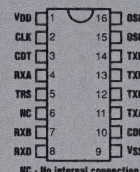
Part #	# Pins	Description	Price
4000	14	Dual 3-input NOR gate/inverter	.25
4001	14	Quad 2-input NOR buffered gate	.25
4002	14	4-input NOR gate	.25
4006	14	18-stage static shift register	.49
4007	14	Dual comp pair/inverter	.25
4008	16	4-bit full adder	.69
4009	16	Hex buffer (inverting)	.69
4010	16	Hex buffer (non-inverting)	.39
4011	14	Quad 2-input NAND gate	.25
4012	14	Dual 4-input NAND gate	.25
4013	14	Dual D flip-flop with set-reset	.29
4014	16	8-stage static shift register	.59
4015	16	Dual 4-bit static shift register	.39
4016	14	Quad bilateral switch	.39
4017	16	Decade counter/divider	.49
4018	16	Divide-by-N counter	.49
4019	16	Quad AND-OR select gate	.39
4020	16	14-stage binary/ripple counter	.59
4021	16	8-stage static shift register	.49
4022	16	Divide-by-8 counter	.59
4023	14	Triple 3-input NAND gate	.25
4024	14	7-stage binary/ripple counter	.49
4025	14	Triple 3-input NOR gate	.25
4026	16	Decade counter/divider	.69
4027	16	Dual JK flip-flop	.39
4028	16	BCD to decimal decoder	.59
4029	16	Binary/decimal up/down counter	.59
4030	14	Quad XOR gate	.39
4034	24	8-bit 3-static shift register	1.19
4035	16	4-bit parallel-in/parallel-out shift register	.99
4040	16	12-stage binary/ripple counter	.59
4041	14	Quad true/complement buffer	.69
4042	16	Quad clocked D latch	.59
4043	16	Quad 3-state NOR R/S latch	.39
4044	16	Quad 3-state NAND R/S latch	.69
4045	16	21-stage counter	1.19
4046	16	Micropower phase-locked loop	.69
4047	14	LP MS/AS multivibrator	.69
4048	16	Expandable 8-input gate	.69
4049	16	Hex inverting buffer	.25
4050	16	Hex non-inverting buffer	.29
4051	16	Single 8-channel analog multiplexer	.59

4000 SERIES

Part #	# Pins	Description	Price
4052	16	4-channel analog multiplexer	.59
4053	16	Triple 2-channel analog multiplexer	.59
4056	16	BCD to 7 segment LCD buffer/driver	.59
4059	24	Programmable divide by N counter	2.79
4060	16	14-stage binary/ripple counter	.59
4066	14	Quad bilateral switch	.29
4067	24	Single 16-channel analog mux/demux	1.99
4068	14	8-input AND/NAND gate	.39
4069	14	Inverter	.25
4070	14	Quad 2-input XOR gate	.29
4071	14	Quad 2-input OR buffered gate	.25
4072	14	Dual 4-input OR gate	.39
4073	14	Triple 3-input AND gate	.25
4075	14	Triple 3-input OR gate	.29
4076	16	3-state quad D flip-flop	.59
4077	14	Quad exclusive NOR	.29
4078	14	8-input NOR/OR gate	.35
4081	14	Quad 2-input AND gate	.25
4082	14	Dual 4-input AND gate	.29
4085	14	2-input AND/OR invert gate	.69
4086	14	2-input AND/OR invert gate	.69
4093	14	Quad 2-input NAND schmitt trigger	.39
4094	16	8-bit shift register with storage	1.19
4098	16	Dual MS multivibrator	.69
4099	16	8-bit addressable latch	.79
4502	16	Strobed hex inverter/buffer	.89
4503	16	Hex buffer	.39
4507	14	Quad exclusive OR gate	.99
4508	24	Dual 4-bit latch	.99
4510	16	Presetable up/down counter	.69
4511	16	BCD to 7 segment latch/decoder	.69
4512	16	8-channel data selector	.69
4514	24	4-bit latch/4-16 decoder	.99
4515	24	4-bit latch/4-16 decoder	.99
4516	16	Presetable up/down counter	.69
4518	16	Dual BCD up counter	.69
4519	16	Selector/XOR gate	.59
4520	16	Dual up binary up counter	.69
4521	16	24-stage frequency divider	.99
4522	16	Divider by N bit counter	.89
4526	16	Divide by N bit counter	.79
4527	16	BCD rate multiplier	.89
4528	16	Dual MS multivibrator	.79
4529	16	Dual 4-channel analog mux	.89
4531	16	12-bit parity tree	.89
4532	16	8-bit priority encoder	.79
4538	16	Dual MS multivibrator	.89
4539	16	Dual 4-channel multiplexer	.99
4541	14	Programmable timer	.79
4543	16	BCD to 7 segment decoder (LCD)	.89
4553	16	3 digit BCD counter	2.39
4555	16	Dual bin to 1 of 4 decoder	.69
4556	16	Dual bin to 1 of 4 decoder	.69
4558	16	BCD to 7 segment decoder	1.49
4560	16	NBCD adder	1.49
4569	16	Dual programmable BCD counter	2.49
4581	24	4-bit ALU	1.49
4582	16	Look-ahead carry block	1.49
4584	14	Hex schmitt trigger (40106)	.59
4585	16	4-bit comparator (F40085)	.69
4702	16	Programmable bit rate generator	9.95
4724	16	8-bit addressable latch	.99

TCM3105 ASYNCHRONOUS FSK VOICEBAND MODEM

The TCM3105 is a single-chip asynchronous Frequency Shift Keying (FSK) voiceband modem that uses silicon gate CMOS technology to implement a switched capacitor architecture. Pin selectable (TXR1, TXR2 and TRS inputs) for a wide range of transmit/receive baud rates and compatible with applicable BELL 202 CCITT V23 standards. Operation is fully reversible, allowing both forward and backward channels to be used simultaneously.



- Single-chip (FSK) modem
- Transmit modulation at 75, 150, 600 and 1200 baud
- Receive Demodulation at 5, 75, 150, 600 and 1200 baud
- Carrier-Detect-Level adjustment and Carrier-Fail output
- Single 5-V power supply
- Low power consumption

TCM3105 \$9.95

MOTOROLA CMOS LOGIC DATA BOOK

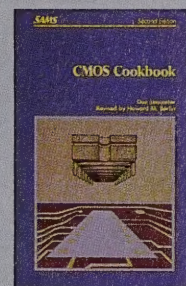
This book has data sheets, Product Selector Guide and Handling and Design Guidelines for Motorola's Metal-Gate CMOS Logic ICs. Includes data on all the logic circuits from the MC14000 series.



MOT131 2 lbs 563 pages, 1991 \$8.95

SAMS REFERENCE BOOK CMOS COOKBOOK

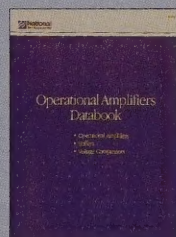
A classic bestseller that features the latest CMOS devices and sub-families, TTL and CMOS interfacing, and a functional equivalency conversion chart. Recommended for both beginners and intermediate users.



SAMS-CMOS 2 lbs 512 pages, 1992 \$19.95

NATIONAL OPERATIONAL AMPLIFIERS

Sections contained in this book are Operational Amplifiers (LM741, LF347, LF411 etc.), Buffers, Voltage Comparators, Instrumentation Amplifiers, Surface Mount and Appendices/Physical Dimensions.



400061 3 lbs 1277 pages, 1993 \$19.95

Derick's HIGH-TECH CORNER

7400 SERIES FAMILY



The 7400 series of TTL (Transistor Logic) devices has greatly benefitted from its 28+ year family history. Various branches of the family tree have been optimized to handle all kinds of applications. There are power stingy slowpokes, power guzzling speedsters and compromises in between.

While the 74LS series is the largest, least expensive, and supports the majority of applications, some applications may require the special features of other members of the family.

74xx series parts can be intermixed within one design because their input and output requirements are essentially the same. Only the drive capability of certain members of the family will normally prevent mixed designs.

Low power parts driving high speed (high power) parts require the most attention. For example, a 74LS part can only drive four 74S devices without degradation. Conversely, a 74S output may drive as many as fifty 74LS inputs.

Family Name	Avg. Delay	Max. Freq.	Power
54/74	10ns	35MHz	10mW
54LS/74LS	10ns	45MHz	2mW
54ALS/74ALS	4ns	50MHz	1mW
54H/74H	6ns	50MHz	22mW
54S/74S	3ns	125MHz	19mW
54AS/74AS	1.5ns	175MHz	10mW

—Derick Moore, Director of Engineering

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

INTEGRATED CIRCUITS

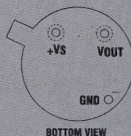
LINEAR

Part #	# Pins	Description	Price
LM35CH	3	Precision cent. temp. sensor, TO-46	8.95
TL064	14	JFET input, low power op amp	.95
TL066	8	Single JFET operational amplifier	.89
TL071	8	JFET operational amplifier, low noise	.55
TL072	8	Dual JFET op amp, low noise	.59
TL074	14	Quad JFET op amp, low noise	.85
TL081	8	JFET input operational amplifier	.45
TL082	8	Dual JFET input operational amplifier	.45
TL083	14	BIFET op. amp (independ. offset adj.)	.99
TL084	14	Quad JFET input operational amplifier	.85
MAX232	16	Dual RS232 RCVR/Transmitter	3.95
MAX233	20	Max232 w/out ext. components required	7.95
LM301	8	Operational amplifier	.39
LM301H	8	Operational amplifier	.79
LM307	8	Operational amplifier	.39
LM308	8	Operational amplifier	.65
LM308H	8	Operational amplifier, TO-5	1.19
LM310	8	Improved voltage follower op amp	1.59
LM311	8	Voltage comparator	.39
LM311H	8	High performance volt comp	.89
LM312H	8	Super gain comp operational amplifier	4.95
LM318	8	Operational amplifier	.99
LM318H	8	High slew rate operational amplifier	2.95
LM319	14	High speed dual comparator	1.09
LM322	14	Precision timer circuit	1.09
LM324	14	Quad operational amplifier	.35
LM329	3	LM329DZ prec Zener 100ppm, TO-92	.69
LM331	8	Volt to freq converter (RC4151)	4.95
LM334	3	Constant current source, TO-92	1.09
LM335	3	Volt mode temperature sensor, TO-92	1.29
LM336	3	2.5v voltage ref, TO-92	1.19
LM339	14	Quad comparator	.39
LF347	14	Quad JFET operational amplifier	.65
LM348	14	Quad 741 operational amplifier	.55
LF351	8	BIFET operational amplifier	.45
LF353	8	Dual JFET operational amplifier	.49
LF355	8	JFET input low power op. amp	.89
LF356	8	JFET general purpose input op. amp	.79
LF357	8	High speed JFET input op. amp	.85
LM358	8	Low power dual operational amplifier	.49
LM359	14	Dual Norton amplifier	1.95
LM380	14	2 watt audio amplifier	.99
LM380N-8	8	Audio power amplifier	1.29
LM381	14	Low noise dual preamplifier	3.49
LM382	14	Low noise dual preamplifier	2.29
LM383	5	8 watt audio power amplifier, TO-220	2.95
LM384	14	5 watt audio amplifier	1.95
LM386N1	8	Low voltage audio amp 6V 250mW	.69
LM386N3	8	Low voltage audio amp, 9V 500 mW	.85
LM386N4	8	Low voltage audio amp, 16V 700 mW	1.19
LM387	8	Low noise dual preamplifier	1.69

NATIONAL LM35CH TEMPERATURE SENSOR

This precision temperature sensor's output voltage is linearly proportional to the °C temperature. Its low output impedance, linear output and precise inherent calibration make interfacing to readout or control circuitry very easy.

- Calibrated directly in °C; 0.5 °C accuracy at +25°C
- Linear + 10.0 mV/°C scale factor
- Rated for full -55°C to +150°C range
- Suitable for remote applications
- Less than 60 uA current drain
- Nonlinearity only ±1/4°C typical
- Low impedance output, 0.1Ω for 1mA load



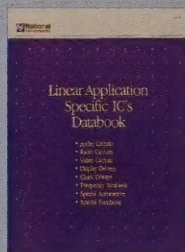
LM35CH\$8.95

LINEAR

Part #	# Pins	Description	Price
LM389	18	Low voltage audio amplifier	1.19
LM390	14	1 watt audio power amplifier	1.39
LM392	8	Operational amplifier and comparator	.89
LM393	8	Low power dual voltage comparator	.35
LM394H	6	Super matched transistor pair, TO-5	6.95
LF398	8	Sample and hold amplifier	1.89
LM399H	4	Precision reference, TO-46	3.79
LF411	8	Single JFET operational amplifier	.65
LF412	8	Dual JFET operational amplifier	1.09
ZN414Z	3	AM radio rec., 150 KHz to 3MHz, TO-92	2.29
LF441	8	JFET input low power op amp	.95
LF442	8	Dual JFET input low power op amp	1.29
LF444	14	Quad JFET input low power op amp	1.79
TL494	16	Pulse width modulator	1.79
TL496	8	9V power supply controller	1.49
TL497	14	Switching voltage regulator	1.95
LM555	8	Timer	.29
LMC555	8	CMOS timer	.59
XRL555	8	Low power 555 timer	.85
LM556	14	Dual timer	.49
NE558	14	Quad 555 timer	.69
NE564	16	High frequency PLL	1.59
LM565	14	Phase locked loop	1.49
LM566	8	Function generator	1.19
LM567	8	Tone decoder	.55
NE570	16	Compressor/expander	2.79
NE571	16	Compander	1.95
NE592	14	Video amplifier	.35
NE602AN	8	Double balanced mixer/oscillator	1.95
MAX690	8	MPU watchdog timer-prec. volt monitor	6.95
MAX691	16	MPU watchdog timer-write protection	7.95
LM709	14	Operational amplifier	.59
LM710	14	Differential comparator	.69
LM733	14	Video amplifier	.59
LM741	8	Operational amplifier	.29
LM741H	8	Op amp, TO-5	.95
LM747	14	Dual LM741 operational amplifier	.59
LM747H	10	Dual 741 op amp, TO-5	.59
LM748	14	Freq adjusted operational amplifier	.59
SAA1027	16	Stepper motor driver	6.79
LM1310	14	FM demodulator	1.49
MC1330	8	TV circuit (SC74348)	1.49
MC1350	8	TV circuit (SN76600), 12V IF amp	.89
MC1358	14	TV IF circuit (SN76666)	.89
LM1458	8	Dual comp operational amplifier	.39
LM1488	14	Quad RS232 driver 75188	.39
DS14C88	14	Quad RS232 driver CMOS	1.09
LM1489	14	Quad RS232 receiver 75189	.39
DS14C89	14	Quad RS232 receiver CMOS	1.09
LM1496	14	Balanced modem	.79
TCM1520	8	Ring detector	1.29

LINEAR APPLICATION SPECIFIC ICs

Included in this book are sections on Audio Circuits (LM380, LM1877 etc.), Radio Circuits, Video Circuits (LM1881 etc.), Display Drivers (LM3909, LM3914 etc.), Clock Drivers, Frequency Synthesis, Special Automotive, and Special Functions (LM555, LM565, LM567 etc.)



400060 3 lbs 1007 pages, 1993\$15.95

CALL FOR.....
Volume Discounts

LINEAR

Part #	# Pins	Description	Price
LM1558H	8	Dual comparator op amp, TO-5	2.49
LM1800	16	PLL stereo demodulator	2.49
LM1812	14	Ultrasonic transceiver	7.95
LM1830	14	Fluid level detector	4.95
LM1871	18	Radio controlled 4 channel transmitter	5.95
LM1872	18	Radio controlled 4 channel receiver	5.95
LM1877	14	Dual audio power amplifier	3.69
LM1881	8	Video sync separator	4.95
ULN2003	16	Darlington trans array (XR2203)	.69
XR2206	16	Function generator	3.79
XR2207	14	Voltage controlled oscillator	3.95
XR2208	16	Operational multiplier	2.49
XR2211	14	FSK demodulator	2.49
XR2240	16	Programmable counter/timer	1.49
26C31	16	Quad differential driver CMOS	2.79
26C32	16	Quad differential receiver CMOS	2.79
26LS31	16	Quad differential driver	.95
26LS32	16	Quad differential receiver	.95
ULN2803A	18	Darl. trans. array, hi-volt./hi-cur.	.95
LM2877	11	Dual power audio amplifier SIP	1.99
LM2878	11	Dual 5 watt audio amplifier SIP	5.49
LM2901	14	LP quad comparator	.59
LM2907	14	Frequency to voltage converter	1.49
LM2917	8	Frequency to voltage converter	1.95
LM2917-14	14	Frequency to voltage converter	1.79
TCM3105	16	Asynchronous FSK voiceband modem	9.95
MC3373	8	CMOS infra red amp/detector	.95
MC3470	18	Floppy disk read amplifier	1.19
MC3479	16	Stepper motor driver	3.95
MC3486	16	Quad RS422/3 Receiver 3-state	.95
MC3487	16	Quad RS422 Driver 3-state	.95
SG3524	16	Regulating pulse width modulator	1.79
LM3900	14	Quad operational amplifier	.49
LM3905	8	Precision timer circuit	1.19
LM3909	8	LED flasher	1.39
LM3911	8	Temperature controller	1.89
LM3914	16	Bargraph display driver	2.19
LM3915	16	3 DB step bargraph driver	2.29
LM3916	16	VU meter display driver	2.29
MC4024	14	Dual voltage controlled multivibrator	2.69
MC4044	14	Phase frequency detector	4.79
RC4136	14	Quad operational amplifier	.99
RC4151	8	Voltage to frequency converter	1.49
RC4558	8	Dual wide band operational amplifier	.49
NE5205	8	Hi-freq. amp, wide-band, 600MHz	2.95
NE5532	8	Int. comp. dual low-noise op amp	1.09
NE5534	8	Single/Dual low-noise op amp	.89
NE5539	14	Ultra hi-frequency operational amplifier	2.95
LM13080	8	Programmable power op amp	1.49
LM13600	16	Transconductance amplifier	.99
LM13700	16	Dual transconductive amplifier	1.19
75107	14	Dual line receiver	.69
75108	14	Differential line receiver	.79
75110	14	Dual line driver	.79
75150	8	RS-232 line driver	1.19
75154	16	RS-232 line receiver	1.19
75160	20	IEEE 488 (GPIB) octal bus Xcvt	3.55
75174	16	Quad RS422 driver 3-state	2.25
75175	16	Quad RS422A/3A receiver 3-state	2.25
75176	8	Differential bus transceiver	1.95
75188	14	Quad line driver	.39
75189	14	Quad line receiver	.39
75T202	18	Low power DTMF receiver	4.95
75365	16	Quad TTL to MOS driver	.75
75450	14	Dual peripheral driver	.89
75451	8	Dual peripheral driver	.39
75452	8	Dual peripheral driver	.49
75453	8	Dual peripheral driver	.49
75454	8	Dual peripheral driver	.49
75477	8	Dual NAND peripheral driver	.89
75491	14	4 segment LED driver 50 mA/seg	.79
75492	14	6 digit LED driver 250 mA	.79
75493	16	4 segment LED driver 30 mA/seg	.89
75494	16	6 digit LED driver 180 mA	.89

TOLL FREE DAY OR FAX NIGHT
800.538.5005

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

VOLTAGE REGULATORS

Part #	Volt/Amps	Pkg	Price
LM309H	+5V	TO-39	2.95
LM309K	+5V/1A	TO-3	1.49
LM317K	+ADJ/1.5A	TO-3	1.99
LM317LZ	+ADJ/100mA	TO-92	.65
LM317T	+ADJ/1.5A	TO-220	.57
LM323K	+5V/3A	TO-3	3.25
LM323T	+5V/3A	TO-220	2.75
LM337K	-ADJ/1.5A	TO-3	2.95
LM337T	-ADJ/1.5A	TO-220	.87
LM338K	+ADJ/5A	TO-3	4.45
LM338T	+ADJ/5A	TO-220	2.75
LM350K	+ADJ/3A	TO-3	3.59
LM350T	+ADJ/3A	TO-220	2.85
LM723	ADJ/150mA	14-pin DIP	.49
LM723H	ADJ/150mA	TO-5	1.19
UA78S40	ADJ/1A	16-pin DIP	1.35
78L05	+5V/100mA	TO-92	.39
7805T	+5V/1.5A	TO-220	.45
7805K	+5V/1.5A	TO-3	1.39
78M05C	+5V/500mA	TO-220	.39
7806T	+6V/1.5A	TO-220	.45
78M06C	+6V/500mA	TO-220	.39
7808T	+8V/1.5A	TO-220	.49
78M08C	+8V/500mA	TO-220	.39
78L12	+12V/100mA	TO-92	.39
7810T	+10V/1.5A	TO-220	.55
7812T	+12V/1.5A	TO-220	.45
7812K	+12V/1.5A	TO-3	1.39
78M12C	+12V/500mA	TO-220	.39
78L15	+15V/100mA	TO-92	.39
7815T	+15V/1.5A	TO-220	.45
7815K	+15V/1.5A	TO-3	1.39
78M15C	+15V/500mA	TO-220	.39
7824T	+24V/1.5A	TO-220	.45
7824K	+24V/1.5A	TO-3	1.39
78M24C	+24V/500mA	TO-220	.39
79L05	-5V/100mA	TO-92	.39
7905T	-5V/1.5A	TO-220	.45
7905K	-5V/1.5A	TO-3	1.49
7906T	-6V/1.5A	TO-220	.45
7908T	-8V/1.5A	TO-220	.45
79L12	-12V/100mA	TO-92	.39
7912T	-12V/1.5A	TO-220	.45
7912K	-12V/1.5A	TO-3	1.49
79L15	-15V/100mA	TO-92	.39
7915T	-15V/1.5A	TO-220	.45
7915K	-15V/1.5A	TO-3	1.49
7924T	-24V/1.5A	TO-220	.57
7924K	-24V/1.5A	TO-3	1.49

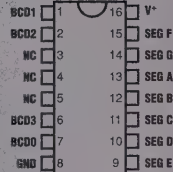
RCA CA3161 BCD-TO-7-SEGMENT DECODER/DRIVER

This monolithic integrated circuit performs the BCD-to-seven-segment decoding function and features constant-current segment drivers. When used with the CA3162 A/D Converter the CA3161

provides a complete digital readout system with a minimum number of external parts.

- TTL-compatible input logic levels
- 25-mA [typ.] constant-current
- Eliminates need for output current-limiting resistors
- Pin compatible with other industry standard decoders
- Low standby power dissipation - 18 mW (typ.)

CA3161 \$1.85

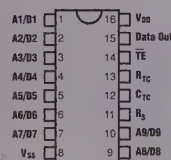


RCA LINEAR

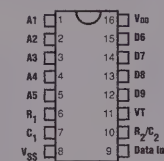
Part #	# Pins	Description	Price
CA3039	12	Diode array, TO-5	1.99
CA3046	14	Transistor array	.89
CA3059	14	Zero voltage switch	2.25
CA3060	16	Variable amp relay	2.95
CA3065	14	TV FM sound	1.49
CA3080	8	Transconductance op amp	.99
CA3081	16	NPN transistor array	.69
CA3082	16	NPN common collector array	.99
CA3083	16	NPN transistor array	.99
CA3086	14	NPN transistor array	.89
CA3089	16	FM/IF system	1.49
CA3096	16	NPN/PNP transistor array	.99
CA3126	16	TV chroma signal generator	1.95
CA3130	8	CMOS operational amplifier	.89
CA3140	8	MOS operational amplifier	.79
CA3146	14	High voltage transistor array	.95
CA3160	8	MOS operational amplifier	.99
CA3161	16	BCD-TO-7 segment decoder/driver	1.85
CA3162	16	A/D converter for 3-1/2 digit readout	5.99
CA3183	16	NPN transistor array	.89

MOTOROLA CMOS ENCODER AND DECODERS

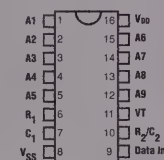
The MC145026 encodes 9 bits of information and serially transmits this information upon receipt of a transmit enable, TE (active-low) signal. Nine inputs may be encoded with trinary data (0, 1, open) allowing 3⁹ (19,683) different codes.



MC145026



MC145027



MC145028

Two decoders are presently available; both use the same transmitter—the MC145026. The decoders receive the 9-bit word and interpret some of the bits as address codes and some as data. The MC145027 interprets the first five transmitted bits as address, and the last four bits as data. The MC145028 treats all nine bits as address. If no errors are received, the MC145027 outputs four data bits, when the transmitter sends address codes that match that of the receiver.

- May be addressed in either binary or trinary
- Trinary addressing maximizes number of codes
- Interfaces with RF, Ultrasonic, or infrared transmission medias
- On-chip R/C oscillator; no crystal required
- High external component tolerance; can use ±5% components

Part #	# Pins	Description	Price
MC145026	16	CMOS Encoder	1.89
MC145027	16	CMOS Decoder (5-bit address)	2.69
MC145028	16	CMOS Decoder (9-bit address)	2.69

CATALOG OUTLET
1238 S. BASCOM AVE. SAN JOSE, CA
(408) 559-7724 M-F 9-7, SAT 9-5, SUN 12-4

SIGNETICS NE602AN DOUBLE-BALANCED MIXER AND OSCILLATOR

The NE602AN is a low-power VHF monolithic double-balanced mixer with input amplifier, on-board oscillator and voltage regulator. It is intended for high performance, lower power communication systems. The gain, intercept performance, lower-power and noise characteristics make the NE602AN a superior choice for high-performance battery operated equipment.

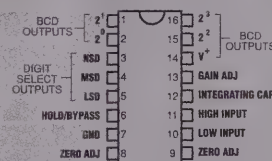


- Low current consumption: 2.4mA typical
- Excellent noise figure: <5.0dB typical at 45MHz
- High operating frequency
- Excellent gain, intercept and sensitivity
- Low external parts count; suitable for crystal/ceramic filters

NE602AN \$1.95

RCA CA3162 A/D CONVERTER FOR 3-DIGIT DISPLAY

The CA 3162 is a μ L monolithic A/D converter that provides a 3-digit multiplexed BCD output. It is used with the CA3161 μ -to-Seven-Segment Decoder/Driver and a minimum of external parts to implement a complete 3-digit display.



- Dual-slope A/D conversion
- Multiplexed BCD display
- Differential input
- Internal timing - no external clock required
- Choice of low-speed (4-Hz) or high-speed (96-Hz) conversion rate
- "Hold" inhibits conversion but maintains display
- Overrange indication

CA3162 \$5.99

NATIONAL POWER ICs

This book has sections on Linear Voltage Regulators (LM323, LM320 series, LM340 series etc.), Low Dropout Voltage Reg., Switching Voltage Reg., Motion Control, Peripheral Drivers (75451, 75452 etc.), High Current Switches and Surface Mount.



400062 2 lbs 790 pages, 1993 \$14.95

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

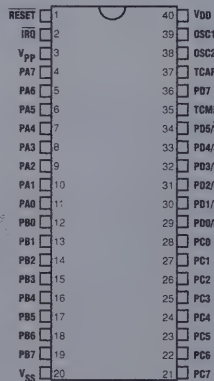
MOTOROLA SERIES

Part #	# Pins	Description	Price
MC1330	8	Low level video detector	1.49
MC1350	8	IF amp, 12V	.89
MC1358	14	TV IF amp	.89
MC1408-6	16	6-bit D/A converter	1.69
MC1408-8	16	8-bit D/A converter	1.49
MC3340	8	Electronic attenuator	1.49
MC3373	8	IR remote control amp/detector	.95
MC3470	18	Floppy disk read amp system	1.19
MC3479	16	Stepper motor driver	3.95
MC3486	16	Quad RS422/3 receiver, 3-state	.95
MC3487	16	Quad RS422 driver, 3-state	.95
MC4024	14	Dual voltage controlled multivibrator	2.69
MC4044	14	Phase frequency detector	4.79
MC145026	16	CMOS Remote Control Encoder	1.89
MC145027	16	CMOS Remote Con. Decoder (5-bit)	2.69
MC145028	16	CMOS Remote Con. Decoder (9-bit)	2.69
MC145151	28	Parallel Input PLL Freq. Synthesizer	2.95
MC145406	16	CMOS RS232 Driver/Receiver	2.49
MC146818A	24	8-Bit Real Time Clock Plus RAM	4.29
MC146818P	24	8-Bit Real Time Clock Plus RAM	4.95
14410	16	2 of 8 tone encoder	6.95
14411	24	Bit rate generator	7.59
14419	16	2 of 8 keypad to binary encoder	1.95
14433	24	CMOS 3-1/2 digit A/D converter	5.95
14490	16	CMOS hex contact bounce eliminator	4.49
14495	16	CMOS hex to 7-segment driver	3.29
14497	18	CMOS 62-chan. remote cont. trans.	6.49
14499	18	CMOS 4-digit, 7-segment driver	3.95
68000-8	64	16-/32-Bit MPU 8MHz	6.95
68000-10	64	16-/32-Bit MPU 10MHz	9.29
68000-12	64	16-/32-Bit MPU 12MHz	12.95
68020-16	114	32-Bit MPU, PCA, 16MHz	139.95
68230-10	48	Parallel Interface/Timer	9.95
68488	40	General Purpose Interface Adaptor	24.95
68681	40	UART	8.95
68701	40	8-Bit MCU, 128 Bytes RAM, 2048 Bytes EPROM, I/O	22.95
68881-12	68	Floating Point Math Co-processor, PGA, 12MHz	69.95
68HC000-10	64	16-/32-Bit HCMOS MPU, 10MHz	15.95
68HC000-12	64	16-/32-Bit HCMOS MPU 12MHz	18.95
68HC000-16	64	16-/32-Bit HCMOS MPU 16MHz	21.95
68HC11A1P	48	8-bit HCMOS MCU, 256 Bytes SRAM, 512 Bytes EPROM, 8-Bit A/D Conv.	16.95
68HC705C8P	40	8-Bit HCMOS MCU, 8K of OTPROM, 24 I/O Lines, SPI, SCI, Timer	18.95
68HC705C8S	40	8-bit, HCMOS MCU, 8K of EPROM, 24 I/O Lines, SPI, SCI, Timer	34.95
68HC705K1P	16	8-Bit, HCMOS MCU, 504 bytes OTPROM, 10 I/O's, Timer	5.95

MOTOROLA 68HC705 8-BIT MICROPROCESSORS

Ideal for 8-bit embedded controller applications requiring up to 31 I/O lines and a serial interface with 8 and 9-bit address modes. EPROM or Write-Once versions.

- 8K of EPROM or OTPROM
- Selectable memory configuration
- COP Watchdog Timer
- 24 bidirectional I/O lines and 7 input-only lines
- Serial peripheral and communications Interface systems
- STOP, WAIT and data retention modes



68HC705C8P	Write-Once version	\$18.95
68HC705C8S	Erasable version	\$34.95

6800 SERIES

Part #	# Pins	Description	Price
6800	40	MPU 1MHz	1.99
68800	40	MPU 2MHz	2.95
6802	40	MPU with clock and RAM 1MHz	3.49
6803	40	8-bit microcomputer	3.95
6808	40	MPU with clock	3.59
6809	40	MPU with internal clock 1MHz	3.95
68809	40	MPU with internal clock 2MHz	5.79
6809E	40	MPU with external clock	2.95
68809E	40	MPU with external clock 2MHz	5.49
6810	24	128x8 static RAM 1MHz	1.29
68810	24	128x8 static RAM 2MHz	3.95
6821	40	PIA 1MHz	1.99
68821	40	PIA 2MHz	2.95
6828	24	Priority interrupt	14.95
6840	28	PTM 1MHz	2.39
68840	28	PTM 2MHz (SC67518)	2.79
6845	40	CRT controller 1MHz	2.29
68845	40	CRT controller 2MHz	3.29
6847	40	Color CRT controller	10.95
6850	24	ACIA 1MHz	1.89
68850	24	ACIA 2MHz	2.49
6852	24	Synch. serial data adaptor	4.95
68854	28	Advanced data link controller	3.95
6875	16	Clock	9.95
6883	40	Synch. address multiplexer (74LS783)	22.95

6500 SERIES

Part #	# Pins	Description	Price
65C02	40	CMOS 6502 microprocessor 1MHz	5.95
65C02-2	40	CMOS 6502 microprocessor 2MHz	6.95
6502	40	8-bit microprocessor 1MHz	3.95
6502A	40	8-bit microprocessor 2MHz	4.95
6502B	40	8-bit microprocessor 3MHz	5.95
6504	28	8-bit microprocessor 1MHz	2.29
6507	28	8-bit microprocessor (C010745) 1MHz	2.49
6520	40	Peripheral interface adaptor 1MHz	2.95
6520A	40	Peripheral interface adaptor 2MHz	3.49
6522	40	Versatile interface adaptor 1MHz	3.79
6522A	40	Versatile interface adaptor 2MHz	4.95
6526	40	Complex interface adaptor 1MHz	11.95
6532	40	128x8 RAM I/O and timer array 1MHz	3.95
6532A	40	128x8 RAM I/O and timer array 2MHz	6.95
6545	40	CRT controller 1MHz	4.29
6545A	40	CRT controller 2MHz	4.95
6551	28	ASYNCR communications interface 1MHz	2.95
6551A	28	ASYNCR communications interface 2MHz	3.79
6561	40	Commodore IC	8.95
6581	28	Sound interface device	12.95

MICROS AND SUPPORT

Part #	# Pins	Description	Price
8031	40	MCU, 128 x 8 RAM, I/O 12MHz	3.65
80C31	40	MCU, 128 x 8 RAM, I/O, 12MHz, CMOS	7.29
8032	40	8-bit MCU, 256 x 8 RAM, I/O, T/C, 12MHz	6.95
80C32	40	8-bit MCU, 256 x 8 RAM, I/O, T/C, 12MHz CMOS	8.95
8035	40	8-bit MCU, 64 x 8 RAM	1.69
80C35	40	8-bit MCU, 64 x 8 RAM, CMOS	4.95
8039	40	8-bit MCU, 128 x 8 RAM	1.69
8052AH	40	MCU with basic interpreter	34.95
8080	40	8-bit MPU (8080A, AM9080)	2.69
8085A	40	8-bit MPU, 3MHz	3.19
80C85	40	8-bit MPU, 3MHz, CMOS	4.95
8085A-2	40	8-bit MPU, 5MHz	3.99
8086	40	16-bit MPU 5MHz	4.49
80C86	40	16-bit MPU, 5MHz, CMOS	7.95
8088	40	8/16-bit MPU, 5MHz	4.19
80C88	40	8/16-bit MPU, 5MHz, CMOS	9.95
8088-1	40	8/16-bit MPU 10MHz	6.95
8088-2	40	8/16-bit MPU 8MHz	6.49
80C88-2	40	8/16-bit MPU, 8MHz, CMOS	10.95
8089	40	8/16-bit HMOS I/O processor	39.95
8155	40	Static RAM, I/O, timer 3MHz	3.69

MICROS AND SUPPORT

Part #	# Pins	Description	Price
8155-2	40	Static RAM, I/O, timer 5MHz	3.99
81C55-5	40	Static RAM, I/O, timer, 5MHz, CMOS	4.95
8156	40	Static RAM, I/O, timer	3.99
8185	18	1024 x 8 static RAM	4.95
8202	40	Dynamic RAM controller D8202A	9.95
8203	40	64K DRAM controller	12.95
8212	24	8 bit input output	2.95
8216	16	Bus driver	1.49
8224	16	Clock generator/driver	2.49
8226	16	Bus driver	2.29
8228	28	System controller	3.95
8237	40	DMA controller (AM9517) 3MHz	3.69
8237-5	40	High perf DMA contr. 5MHz	3.99
82C37-5	40	High perf. DMA contr., 5MHz, CMOS	5.95
8238	28	System controller	4.95
8243	24	Input output expander	2.49
8250	40	Communications interface (IBM PC/XT)	5.95
8251	28	Programmable communications interface	2.95
8251A	28	Programmable communications interface	3.49
82C51A	28	Prog. communications interface CMOS	3.69
8253	24	Programmable interval timer	1.99
8253-5	24	Programmable interval timer	2.79
82C53-5	24	Programmable interval timer CMOS	3.95
8254	24	Programmable interval timer 8MHz	4.39
82C54	24	Prog. interval timer CMOS 8MHz	3.89
8254-2	24	Programmable interval timer 10MHz	5.95
8255-5	40	Prog. peripheral interface 3.3MHz	2.95
82C55-5	40	Prog. peripheral inter. 3.3MHz CMOS	4.95
8256	40	Multifunction UART	11.49
8257	40	Programmable DMA controller	1.99
8257-5	40	Programmable DMA controller	3.49
8259	28	Programmable interrupt controller	1.99
8259-5	28	Programmable interrupt controller	2.29
8271	40	Programmable floppy disk controller	29.95
8272	40	FDC SS/DD (UPD765, R6765)	3.49
8274	40	USART, multi-protocol (UPD7201)	7.95
8275	40	Programmable CRT controller	17.95
8279	40	Programmable keyboard interface	2.95
8279-5	40	Programmable keyboard interface	3.49
82C79-5	40	Prog. keyboard interface CMOS	5.95
8282	20	Octal latch	3.59
82C82	20	Octal latch CMOS	4.49
8283	20	Octal latch	3.99
82C83	20	Octal latch CMOS	4.99
8284A	18	Clock generator and driver	2.29
8286	20	Octal bus transceiver (DP8304)	2.95
82C86	20	Octal bus transceiver CMOS	4.99
8287	20	Octal bus transceiver (DP8303)	2.99
82C87	20	Octal bus trans. CMOS	3.99
8288	20	Bus controller	3.99
82C88	20	Bus controller, CMOS	4.99
8289	20	Bus arbiter	9.95
8292	40	GPB controller	14.95
8741	40	8-bit MCU, 1Kx8 EPROM, 64x8 RAM, I/O, Timer, clock	9.95
8742	40	8-bit MCU, 2Kx8 EPROM, 128x8 RAM, I/O, Timer, clock	14.95
8748H	40	8-bit MCU, 1Kx8 EPROM, 64x8 RAM, I/O, timer, clock, 11MHz	8.95
8749H	40	8-bit MCU, 2Kx8 EPROM, 128x8 RAM, I/O, timer, counter, 11MHz	9.95
8751H	40	8-bit MCU, 4K x 8 EPROM, 128 x 8 RAM, I/O, T/C, 12MHz	29.95
87C51	40	8-bit MCU, 4K x 8 EPROM, 128 x 8 RAM, I/O, T/C, CMOS 12MHz	39.95
8755A	40	2048 x 8 EPROM with I/O	14.95
A80286-10	68	(PGA) 16-bit MPU 10MHz	13.95
A80286-12	68	(PGA) 16-bit MPU 12MHz	16.95
A80286-16	68	(PGA) 16-bit MPU 16MHz	34.95
N80286-8	68	(PLCC) 16-bit MPU 8MHz	10.79
N80286-10	68	(PLCC) 16-bit MPU 10MHz	12.79
N80286-16	68	(PLCC) 16-bit MPU 16MHz	24.79
R80286-6	68	(LCC) 16-bit MPU, 6MHz	7.95
R80286-8	68	(LCC) 16-bit MPU, 8MHz	10.95
R80286-10	68	(LCC) 16-bit MPU, 10MHz	12.95
R80286-12	68	(LCC) 16-bit MPU, 12MHz	14.95
R80286-16	68	(LCC) 16-bit MPU, 16MHz	24.95
80386-33	132	(PGA) 32-bit MPU, 33MHz	119.25
80386-40	132	(PGA) 32-bit MPU, 40MHz	129.25
80486-33	168	(PGA) 32-bit MPU, 33MHz	499.95
80486-50	168	(PGA) 32-bit MPU, 50MHz	699.00
P82C206	44	(PLCC) Int. cont. w/DMA inter T/C RTC	15.95

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

PAL

Part #	Speed	In	Out	Prog I/Os	Functions	# Pins	Price
10H8	35ns	10	8		AND-OR	20	2.95
10L8	35ns	10	8		AND-OR Inv.	20	2.25
12H6	35ns	12	6		AND-OR	20	2.25
12L6	35ns	12	6		AND-OR Inv.	20	2.25
12L10	35ns	12	10		AND-OR Inv.	24/3*	3.95
14H4	35ns	14	4		AND-OR	20	2.95
14L4	35ns	14	4		AND-OR Inv.	20	2.25
16C1	35ns	16	1		AND-OR-NOR	20	5.95
16H2	35ns	16	2		AND-OR	20	2.45
16L2	35ns	16	2		AND-OR Inv.	20	2.45
16L8	35ns	10	2	6	AND-OR Inv.	20	2.25
16L8B	15ns	10	2	6	AND-OR Inv.	20	3.49
16P8A	25ns	10	2	6	AND-OR	20	3.49
16R4	35ns	8	4	4	*AND-OR Inv.	20	2.25
16R4B	15ns	8	4	4	*AND-OR Inv.	20	3.49
16R6	35ns	8	6	2	*AND-OR Inv.	20	2.25
16R6B	15ns	8	6	2	*AND-OR Inv.	20	2.75
16R8	35ns	8	8		*AND-OR Inv.	20	2.25
16R8B	15ns	8	8		*AND-OR	20	2.95
18L4	40ns	18	4		AND-OR Inv.	24/3*	2.25
20C1	40ns	20	1		AND-OR-NOR	24/3*	3.25
20L2	40ns	20	2		AND-OR Inv.	24/3*	2.95
20L8	40ns	14	2	6	AND-OR Inv.	24/3*	2.25
20L8A	25ns	14	2	6	AND-OR Inv.	24/3*	2.95
20L10	40ns	12	2	8	AND-OR Inv.	24/3*	2.95
20L10A	25ns	12	2	8	AND-OR Inv.	24/3*	3.45
20R4A	25ns	12	4	4	*AND-OR Inv.	24/3*	2.45
20R6	40ns	12	6	2	*AND-OR Inv.	24/3*	2.25
20R6A	25ns	12	6	2	*AND-OR Inv.	24/3*	2.95
20R8	40ns	12	8		*AND-OR Inv.	24/3*	2.25
20R8A	25ns	12	8		*AND-OR Inv.	24/3*	2.95
20RA10	30ns	10	10		Asynchronous	24/3*	12.95
20S10	35ns	10	10		AND-OR	20	6.95
20X4	50ns	10	4	6	AND-OR Inv.	24/3*	2.95
20X4A	30ns	10	4	6	AND-OR Inv.	24/3*	3.95
20X8	50ns	10	8	2	*AND-OR-XOR Inv.	24/3*	2.45
20X8A	30ns	10	8	2	*AND-OR-XOR Inv.	24/3*	2.95
20X10	50ns	10	10		*AND-OR-XOR Inv.	24/3*	4.95
20X10A	30ns	10	10		*AND-OR-XOR Inv.	24/3*	5.95

* Registered outputs

GAL

Part #	Speed	In/Out	Description	# Pins	Price
16V8	35ns	8/8	Replaces 10L8 thru 16RP8	20	1.95
16V8-15	15ns	8/8	Replaces 10L8 thru 16RP8	20	2.25
16V8-12	12ns	8/8	Replaces 10L8 thru 16RP8	20	4.95
20V8	35ns	20/8	Replaces 14L8 thru 20RP8	24/3*	2.95
20V8-15	15ns	20/8	Replaces 14L8 thru 20RP8	24/3*	3.45
22V10	35ns	22/10	Prog. Macrocell outputs	24/3*	6.95
22V10-15	15ns	22/10	Prog. Macrocell outputs	24/3*	13.95

93CX6 SERIAL EEPROMS

The 93C06, 93C46, 93C56 and 93C66 (256/1024/2048/4096) has bits of CMOS electrically erasable memory divided into 16-bit registers. They operate from a single 5V supply since Vpp is generated on-board.

Serial organization lets these devices to be packaged as an 8-pin DIP to save board space.

- Typical active current 400uA; typical standby current 25uA
- Self-timed programming cycle
- Device status signal during programming mode
- Over 10 years data retention; typically 40,000 writes

Part #	Organization	# Pins	CMOS	Price
93C06	256-Bit, 5V	8	✓	1.49
9346	1024-Bit, 5V	8	✓	1.95
93C46	1024-Bit, 5V	8	✓	2.25
93C56	2048-Bit, 5V	8	✓	2.95
93C66	4096-Bit, 5V	8	✓	4.95

ALTERA UV ERASABLE PLD

Part #	Speed	Description	# Pins/Style	Price
EP320	30ns	8 Macrocells, CMOS	20/3* DIP	11.95
EP600	45ns	16 Macrocells, CMOS	24/3* DIP	17.49
EP610	25ns	16 Macrocells, CMOS, Hi-performance	24/3* DIP	19.95
EP900	55ns	24 Macrocells, CMOS	40/6* DIP	29.95
EP910	25ns	24 Macrocells, CMOS, Hi-performance	40/6* DIP	33.95
EP1810	35ns	48 Macrocells, CMOS, Hi-performance	68/CLCC*	69.95
EP320PC	30ns	8 Macrocells, CMOS†	20/3* DIP	8.95
EP610PC	25ns	16 Macrocells, CMOS, Hi-performance†	24/3* DIP	14.95

*Ceramic Leaded Chip Carrier †One Time Programmable

ATMEL UV ERASABLE PLD

Part #	Speed	Description	# Pins/Style	Price
ATV750L25DC	25ns	20 Flip-flops, 10 I/O pins	24/3* DIP	15.95
ATV750L25KC	25ns	20 Flip-flops, 10 I/O pins	28/CLCC*	23.95
ATV2500L30DC	30ns	48 Flip-flops, 24 I/O pins	40/6* DIP	29.95
ATV2500L30KC	30ns	48 Flip-flops, 24 I/O pins	44/CLCC*	39.95
ATV5000L30KC	30ns	128 Flip-flops, 52 I/O pins	68/CLCC*	109.95

*Ceramic Leaded Chip Carrier

SIGNETICS FPLA*

Part #	Description	# Pins	Price
PLS100	FPLA (16x48x8) 3-State	28	11.95
PLS101	FPLA (16x48x8) Open Coll.	28	15.95
PLS153	FPLA (18x42x10) 3-State	20	3.45
PLS173	FPLA (22x42x10) 3-State	24	5.95

* Field Programmable Logic Array

EPROM

Part #	Speed	Org.	# Pins	V	CMOS	Price
1702	1000ns	256 x 8	24	25v		4.45
2708	450ns	1024 x 8	24	25v		4.95
TMS2516	450ns	2048 x 8	24	25v		4.25
TMS2716	450ns	2048 x 8	24	25v		5.75
2716	450ns	2048 x 8	24	25v		3.95
2716-1	350ns	2048 x 8	24	25v		4.55
2716B	450ns	2048 x 8	24	12.5v		4.25
TMS2532	450ns	4096 x 8	24	25v		6.95
2732A-450	450ns	4096 x 8	24	21v		3.95
2732A-200	200ns	4096 x 8	24	21v		4.25
27C32-200	200ns	4096 x 8	24	12.5v	✓	5.95
2764A-300	300ns	8192 x 8	28	12.5v		3.45
2764A-250	250ns	8192 x 8	28	12.5v		3.95
2764A-200	200ns	8192 x 8	28	12.5v		4.49
2764A-150	150ns	8192 x 8	28	12.5v		4.55
27C64A-250	250ns	8192 x 8	28	12.5v	✓	3.45
27C64A-150	150ns	8192 x 8	28	12.5v	✓	3.95
27128A-250	250ns	16384 x 8	28	12.5v		3.95
27128A-200	200ns	16384 x 8	28	12.5v		4.75
27128A-150	150ns	16384 x 8	28	12.5v		6.95
27C128A-250	250ns	16384 x 8	28	12.5v	✓	4.95
27C128A-150	150ns	16384 x 8	28	12.5v	✓	5.45
27C128A-75	75ns	16384 x 8	28	12.5v	✓	9.95
27256-250	250ns	32768 x 8	28	12.5v		4.75
27256-200	200ns	32768 x 8	28	12.5v		5.25
27256-170	170ns	32768 x 8	28	12.5v		5.45
27C256-250	250ns	32768 x 8	28	12.5v	✓	4.45
27C256-200	200ns	32768 x 8	28	12.5v	✓	4.75
27C256-150	150ns	32768 x 8	28	12.5v	✓	5.25
27C256-120	120ns	32768 x 8	28	12.5v	✓	5.95
27512-250	250ns	65536 x 8	28	12.5v		5.95
27C512-250	250ns	65536 x 8	28	12.5v	✓	5.95
27C512-200	200ns	65536 x 8	28	12.5v	✓	6.45
27C512-150	150ns	65536 x 8	28	12.5v	✓	6.25
27C512-120	120ns	65536 x 8	28	12.5v	✓	6.95
27C101-200	200ns	131072 x 8	32	12.5v	✓	7.95
27C101-150	150ns	131072 x 8	32	12.5v	✓	8.25
27C101-120	120ns	131072 x 8	32	12.5v	✓	9.25
27C201-150	150ns	262144 x 8	32	12.5v	✓	10.95
27C201-120	120ns	262144 x 8	32	12.5v	✓	11.95
27C401-150	150ns	524288 x 8	32	12.5v	✓	29.95
27C401-120	120ns	524288 x 8	32	12.5v	✓	32.95
7C261-35	35ns	8192 x 8	24/3* 12.5v		✓	33.95
7C263-35	35ns	8192 x 8	24/3* 12.5v		✓	32.95
7C264-35	35ns	8192 x 8	24 12.5v		✓	31.95
7C251-45	45ns	16384 x 8	28/3* 12.5v		✓	39.95
7C254-45	45ns	16384 x 8	28 12.5v		✓	32.95
7C271-45	45ns	32768 x 8	28/3* 12.5v		✓	39.95
7C274-35	35ns	32768 x 8	28 12.5v		✓	36.95

*High Performance

Note: 0.6" wide package unless otherwise specified

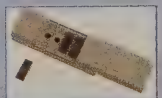
EEPROM

Part #	Speed	Org.	# Pins	CMOS	Price
2816-450	450ns	2K x 8	24		3.55
2816-250	250ns	2K x 8	24		4.45
2816-150	150ns	2K x 8	24		5.45
28C16-250	250ns	2K x 8	24	✓	5.45
28C16-150	150ns	2K x 8	24	✓	5.95
2864-250	250ns	8K x 8	28		7.95
28C64-250	250ns	8K x 8	28	✓	8.25
28C64-150	150ns	8K x 8	28	✓	8.95
28C256-250	250ns	32K x 8	28	✓	29.95
28C256-350	350ns	32K x 8	28	✓	22.95

DATARASE II EPROM ERASER

This low-cost pocket-sized eraser simultaneously handles up to 4 EPROMs.

- Quick erase-time
- Accepts any standard EPROM
- Includes wall plug power supply



DATARASE II 1 lb \$39.95

Derick's HIGH-TECH CORNER

PALs AND GALs ("Friends and Lovers")

Many board designs today are based on, and revolve around the use of PLDs (Programmable Logic Devices). The simplest PLDs are the Programmable Array Logic and Generic Array Logic groupings.

While many are used for what is called TTL "glue logic" replacement, their versatility and "late in the design" reprogrammability have made them the designer's friend.

PALs come in a variety of configurations, each of which is tailored for a narrow range of applications. For example, one PAL might have D-type registers for a kind of byte wide latch, while another has 2 registers and 6 multiple inputs and/or gates.

A GAL is very similar to the PAL with several significant improvements. Most important to me is the ability of a GAL to be erased and reprogrammed. (Just in case I make a mistake.) Most GALs are also lower powered, and all GALs have the ability to mimic the ability of a whole group of PALs.

This means you only need a couple of types of GAL in your spare parts location, and this will probably save you money.

—Derick Moore
Director of Engineering

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

Z80 SERIES

Part #	#Pins	Description	Price
Z80-CPU	40	8-bit MPU 2.5MHz	1.49
Z80A-CPU	40	8-bit MPU 4.0MHz	1.49
Z80B-CPU	40	8-bit MPU 6.0MHz	2.59
Z80-CTC	28	Counter Timer circuit 2.5MHz	1.49
Z80A-CTC	28	Counter Timer circuit 4.0MHz	1.49
Z80B-CTC	28	Counter Timer circuit 6.0MHz	2.95
Z80-DART	40	Dual Asynch. Receiver/Trans. 2.5MHz	3.59
Z80A-DART	40	Dual Asynch. Receiver/Trans. 4.0MHz	3.59
Z80B-DART	40	Dual Asynch. Receiver/Trans. 6.0MHz	3.95
Z80-DMA	40	Direct Memory Access circuit 2.5MHz	3.95
Z80A-DMA	40	Direct Memory Access circuit 4.0MHz	3.95
Z80-PIO	40	Parallel IO controller (MK3881) 2.5MHz	1.79
Z80A-PIO	40	Parallel IO controller (MK3881-4) 4.0MHz	1.79
Z80B-PIO	40	Parallel IO controller (MK3881-6) 6.0MHz	2.95
Z80-SIO/0	40	Serial IO controller (MK3884) 2.5MHz	3.59
Z80A-SIO/0	40	Serial IO controller (MK3884-4) 4.0MHz	3.59
Z80B-SIO/0	40	Serial IO controller (MK3884-6) 6.0MHz	4.95
Z80-SIO/1	40	Serial IO controller 2.5MHz	3.59
Z80A-SIO/1	40	Serial IO controller 4.0MHz	3.59
Z80-SIO/2	40	Serial IO controller (MK3887) 2.5MHz	3.59
Z80A-SIO/2	40	Serial IO controller (MK3887-4) 4.0MHz	3.59
Z80B-SIO/2	40	Serial IO controller (MK3887-6) 6.0MHz	3.95
Z80-SIO/9	40	Serial IO controller 2.5MHz	4.95
Z80A-SIO/9	40	Serial IO controller 4.0MHz	5.95
Z8671	40	8-bit MPU with Basic	18.95
Z84C0008	40	8-bit MPU 8MHz CMOS	5.95
Z84C1008	40	Direct Mem. Access (DMA) 8MHz CMOS	9.95
Z84C2008	40	Parallel IO controller (PIO) 8MHz CMOS	5.95
Z84C3008	28	Counter Timer Circuit (CTC) 8MHz CMOS	5.95
Z84C4008	40	Serial IO controller (SIO/0) 8MHz CMOS	6.95
Z84C4108	40	Serial IO controller (SIO/1) 8MHz CMOS	6.95
Z84C4208	40	Serial IO controller (SIO/2) 8MHz CMOS	6.95
Z84C5010	40	Z80 RAM80, 10MHz CMOS (CPU, 2K bytes SRAM, OSC)	10.95
Z0765A08	40	SS/DD floppy disk controller 8MHz	5.95
Z0853006	40	Serial Comm. Controller (SCC) 6MHz	5.95
Z0853606	40	Counter/Timer IO 6MHz	7.95

STATIC RAM

Part #	Speed	Org.	# Pins	CMOS	LP	Price
2101	450ns	256x4	22			1.49
2111	450ns	256x4	18			1.69
5101	450ns	256x4	22	✓		2.49
2102-1	450ns	1Kx1	16			.89
2114	450ns	1Kx4	18			1.19
2114-25	250ns	1Kx4	18			1.49
2114L-4	450ns	1Kx4	18	✓		1.25
2114L-3	300ns	1Kx4	18	✓		1.29
2114L-2	200ns	1Kx4	18	✓		1.95
2148	55ns	1Kx4	18			1.95
2147	55ns	4Kx1	18			1.95
UPD410	100ns	4Kx1	22			2.29
HM6116-2	120ns	2Kx8	24	✓		2.49
HM6116-1	100ns	2Kx8	24	✓		2.79
HM6116LP-3	150ns	2Kx8	24	✓	✓	2.69
HM6116LP-2	120ns	2Kx8	24	✓	✓	2.95
HM6116LP-1	100ns	2Kx8	24	✓	✓	3.19
HM6116LP-70	70ns	2Kx8	24	✓	✓	4.95
HM6116LSP-15	150ns	2Kx8	24/3*	✓	✓	3.59
TMM2016-150	150ns	2Kx8	24			2.39
TMM2016-100	100ns	2Kx8	24			2.69
6516-45	45ns	2Kx8	24/3*	✓	✓	4.29
HM6264-15	150ns	8Kx8	28	✓	✓	3.79
HM6264-10	100ns	8Kx8	28	✓	✓	4.29
HM6264LP-15	150ns	8Kx8	28	✓	✓	3.95
HM6264LP-12	120ns	8Kx8	28	✓	✓	4.69
HM6264LP-10	100ns	8Kx8	28	✓	✓	4.95
HM6264LP-70	70ns	8Kx8	28	✓	✓	5.49
HM6264LSP-10	100ns	8Kx8	28/3*	✓	✓	5.49
7C185-15	15ns	8Kx8	28/3*	✓	✓	5.25
HM6267LP-45	45ns	16Kx1	20	✓	✓	5.95
6288-20	20ns	16Kx4	22	✓	✓	5.79
6288-12	12ns	16Kx4	22	✓	✓	11.95
HM62256LP-12	120ns	32Kx8	28	✓	✓	5.49
HM62256LP-10	100ns	32Kx8	28	✓	✓	6.19
HM62256LP-85	85ns	32Kx8	28	✓	✓	6.59
HM62256LP-70	70ns	32Kx8	28	✓	✓	6.95
HM62832-20	20ns	32Kx8	28/3*	✓	✓	12.95
HM62832-15	15ns	32Kx8	28/3*	✓	✓	15.95
HM62832-12	12ns	32Kx8	28/3*	✓	✓	19.95
5527BSPL-10	100ns	32Kx8	28/3*	✓	✓	7.95
HM65256LP-10*	100ns	32Kx8	28	✓	✓	5.49
4C187-15	15ns	64Kx1	22	✓	✓	8.95
6208-25	25ns	64Kx4	24/3*	✓	✓	9.95
6208-15	15ns	64Kx4	24/3*	✓	✓	13.95
HM628128LP-10	100ns	128Kx8	32	✓	✓	19.95
HM628128LP-85	85ns	128Kx8	32	✓	✓	21.95
HM658128LP-10*	100ns	128Kx8	32	✓	✓	12.95
HM658512LP-10*	100ns	512Kx8	32	✓	✓	34.95

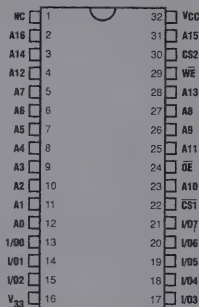
* Pseudo SRAM (not fully static)
NOTE: 0.6" wide package unless otherwise specified for 24 pins or more

128K X 8 CMOS STATIC RAM

The HM628128 is a CMOS static RAM organized as 128k word x 8-bits. It realizes higher density, higher performance and lower power consumption. It offers low power standby power dissipation; therefore, it is suitable for battery back-up systems.

- Completely static memory, no clock or timing strobe required
- Common data input and output; three state output
- TTL compatible inputs and outputs

Part #	# Pins	Description	Price
HM628128LP-10	32	100ns 128K x 8 static RAM	19.95
HM628128LP-85	32	85ns 128K x 8 static RAM	21.95



DYNAMIC RAM

Part #	Speed	Organization	#Pins	Price
2118	150ns	16Kx1	16	.89
TMS4416	150ns	16Kx4	18	1.49
TMS4416-12	120ns	16Kx4	18	1.69
4116-200	200ns	16Kx1	16	.75
4116-150	150ns	16Kx1	16	1.15
4116-120	120ns	16Kx1	16	1.85
MK4332	200ns	32Kx1	16	4.95
4164-200	200ns	64Kx1	16	1.29
4164-150	150ns	64Kx1	16	1.49
4164-120	120ns	64Kx1	16	1.69
4164-100	100ns	64Kx1	16	1.89
TMS4464-12	120ns	64Kx4	18	2.49
TMS4464-10	100ns	64Kx4	18	2.89
TMS4464-80	80ns	64Kx4	18	3.19
41128-150*	150ns	128Kx1	16	2.99
41256-150	150ns	256Kx1	16	1.55
41256-120	120ns	256Kx1	16	1.65
41256-100	100ns	256Kx1	16	1.75
41256-80	80ns	256Kx1	16	1.95
41256-60	60ns	256Kx1	16	2.39
41256-100	100ns	256Kx4	20	4.95
414256-80	80ns	256Kx4	20	5.49
414256-60	60ns	256Kx4	20	5.95
52C4256-80**	80ns	256Kx4 video	28/ZIP	16.95
1MB-120	120ns	1Mx1	18	4.25
1MB-100	100ns	1Mx1	18	4.49
1MB-80	80ns	1Mx1	18	4.99
1MB-60	60ns	1Mx1	18	5.49

* Piggyback style
** Zigzag in-line package

MOTOROLA FAST STATIC RAMS

This book has chapters on Bi-CMOS static RAMs, CMOS static RAMs, application specific static RAMs and fast static RAM modules. Application notes, a Selector Guide and a Cross Reference Guide are also included.



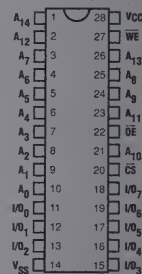
MOT156 2 lbs 648 pages, 1992\$9.95

32K X 8 HIGH-SPEED CMOS STATIC RAM

The HM62832 is a high-performance, low-power, CMOS static RAM organized as 32,768 words by 8-bits per word. The 8 data-in and data-out signals share I/O pins. This chip is available in 3 speeds with maximum access times of 12ns- 20ns. Inputs and output are TTL compatible. Operates from a single 5V power supply. Dissipation drops to 100 mW (typical) when memory is deselected (enable is high).

- Automatic powerdown during long cycles
- Chip-select powerdown, output enable
- Data retention at 2V for battery backup operation
- Low power standby operation - 10 mW typical

Part #	# Pins	Description	Price
HM62832-20	28/3*	20ns 32Kx8 CMOS static RAM	12.95
HM62832-15	28/3*	15ns 32Kx8 CMOS static RAM	15.95
HM62832-12	28/3*	12ns 32Kx8 CMOS static RAM	19.95



ZILOG DATA BOOKS

Z80 CPU TECHNICAL MANUAL

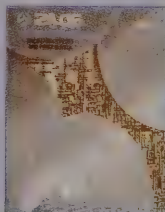
Manual includes an introduction, the architecture, pin description, timing, instruction set description, interrupt response, and hardware/software implementation examples for the Z80 CPU, (all clock speeds).

ZIL29 1 lb 338 pages, 1991\$6.95

MICROPROCESSORS AND PERIPHERALS

This book gives product specifications for the Discrete Z80® Family, embedded controllers and serial communications controllers. Includes technical articles, Z80® development support, a Superintegration™ products Guide, Support Products Summary, Z80®/Z180®/Z280® hardware and software support and more.

ZIL2610 3 lbs 1324 pages, 1992\$9.95



Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

SIMM MODULES

SIMM modules reduce board space requirements by mounting chips closely together on a PCB. Ideal for compact designs. Some devices available in 3 and 9-chip versions.



Part #	Organization	Speed	# Chips	Price
41256A8B-10	256K x 8	100ns	8	14.95
41256A9B-10	256K x 9	100ns	9	14.95
41256A9B-80	256K x 9	80ns	3	14.95
41256A9B-60	256K x 9	60ns	3	16.95
421000A8B-80	1M x 8	80ns	2	39.95
421000A8B80X80	1M x 8	80ns	8	45.95
421000A8B-70	1M x 8	70ns	2	39.95
421000A9B-10	1M x 9	100ns	3	39.95
421000A9B-80	1M x 9	80ns	3	39.95
421000A9B80X9	1M x 9	80ns	9	49.95
421000A9B-70	1M x 9	70ns	3	42.95
421000A9B70X9	1M x 9	70ns	9	49.95
421000A9B-60	1M x 9	60ns	3	45.95
421000A9B60X9	1M x 9	60ns	9	59.95
424000A8B-80	4M x 8	80ns	8	154.95
424000A9B-80	4M x 9	80ns	9	149.95
424000A9B-70	4M x 9	70ns	9	154.95
424000A9B-60	4M x 9	60ns	9	159.95

SIP MODULES

Unlike SIMM modules, SIP modules have pins that enable the modules to be inserted in a SIP socket or soldered directly to a PCB. Use with SIP sockets (sold below) for wire-wrap construction.

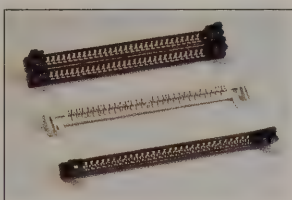


Part #	Speed	Organization	Price
256KX9SIP-80	80ns	256K x 9	15.95
256KX9SIP-60	60ns	256K x 9	17.95
1MBX9SIP-10	100ns	1M x 9	44.95
1MBX9SIP-80	80ns	1M x 9	44.95
1MBX9SIP-60	60ns	1M x 9	49.95

SIMM AND SIP SOCKETS

For replacement and prototype work. SIMM sockets utilize edge connectors for standard application. SIP sockets are ideal for wire-wrap applications.

- 30-pin for SIMMs
- Plastic polarity pins
- Tin-plated for reliability
- Locking tabs for secure insertion



SIMM-SOCKET 1 lb	\$2.95
SIMM-SOCKET-2 1 lb Dual style	\$3.95
SIMM-SOCKET-A 1 lb Angled style	\$3.95
SIP-SOCKET 1 lb For SIP modules	\$1.95
SIP-SOCKET-WW 1 lb Wire-wrap for SIPs	\$3.95

COST-EFFECTIVE Z-RAM MEMORY MODULES



Let Z-RAM upgrade your workstation's memory for less! Z-RAM products have a reputation for quality, reliability and compatibility. They feature a manufacturer's lifetime warranty, JDR's 30-day money-back guarantee and a substantial savings over other vendors.

MODULES FOR COMPAQ SYSTEMS

Maximize the performance and functionality of your Compaq SystemPro, DeskPro, portable and notebook computers. Includes manufacturer's lifetime warranty.

Part #	Size	Computer Compatibility	Price
510131	1Mb	DeskPro 386/20, 20e, 25, 25e	69.95
510303	1Mb	SLT 386S/20	69.95
510235	1Mb	SLT/286	99.95
510304	2Mb	SLT 386S/20	129.95
510144	2Mb	DeskPro 386/33, 33L, 486/33L, 486/25, SystemPro	129.95
510689	2Mb	DeskPro 386N and 386S/20	119.95
510132	4Mb	DeskPro 386/20e and /25e	219.95
510237	4Mb	SLT/286	399.95
510305	4Mb	SLT 386S/20	195.95

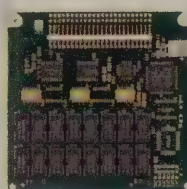
MODULES FOR TOSHIBA SYSTEMS

Your Toshiba portable computer will never know the difference, since Z-RAM meets or surpasses all of your system's specifications. Includes manufacturer's lifetime warranty.

Part #	Size	Computer Compatibility	Price
520301	2Mb	T5100	124.95
520304	2Mb	T5200	129.95
520306	2Mb	T1200 XE	124.95
520307	2Mb	T3200 SX	129.95
520308	2Mb	T3100 SX	129.95
520309	4Mb	T3200 SX	199.95
520310	4Mb	T3100 SX	199.95

MODULES FOR H-P PRINTERS

Upgrade your HP LaserJet for less using state-of-the-art high-density memory. Lower component counts mean higher reliability. Includes manufacturer's lifetime warranty.



Part #	Size	Printers	Price
525474	1Mb	HP LaserJet IIp, III & IIID	79.95
525063	1Mb	HP LaserJet III SI	69.95
525475	2Mb	HP LaserJet IIp, III & IIID	129.95
525065	4Mb	HP LaserJet III SI & LaserJet 4	199.95

ORDER TOLL FREE
800-538-5000
24 • HOURS • A • DAY

MODULES FOR AST SYSTEMS

Extensive compatibility testing and burn-in procedures assure the right upgrade for your AST Premium, Bravo and notebook computers. With manufacturer's lifetime warranty.

Part #	Size	Computer Compatibility	Price
515811	1Mb	Premium Exec 286/12 & 386SX/20	59.95
515783	1Mb	Premium II 386SX/20 and 16, 386/33T/25, 386/33TE, Cupid-32 Memory Expansion Card (including earlier version)	54.95
515718	2Mb	Bravo 486/25	119.95
515813	4Mb	Premium Exec 286/12 & 386SX/20	189.95
515784	4Mb	Premium II 386SX/20 and 16, 386/33T/25 and 33, 486/SX, 486/25, 25e and 486/33, Cupid-32 Memory Expansion Card	219.95

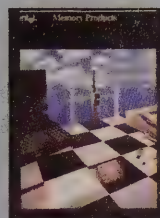
MODULES FOR IBM PS/2 SYSTEMS

Utilize high-density chips with higher reliability in your IBM PS/2 desktop or laptop/notebook computer. Includes manufacturer's lifetime warranty.

Part #	Size	Computer Compatibility	Price
505603	1Mb	IBM PS/2 Model 55SX, 65SX, 70, 061, E61, 121	69.95
505402	2Mb	IBM PS/2 Laptop 40SX	129.95
505604	2Mb	IBM PS/2 Model 502, 55SX, 65SX, 70, 061, E61, 121, PS/2, 90/95 Portable Models 70-031, P75, 061 and 121	104.95
505404	4Mb	IBM PS/2 Laptop 40SX	239.95
505128	4Mb	IBM PS/2 Portable Model P75 and Models 90/95	239.95
505408	8Mb	IBM PS/2 Laptop 40SX	499.95

INTEL MEMORY PRODUCTS BOOK

Most of this handbook is devoted to techniques and information to aid in the design of semiconductor memory into an application or system. Informative data sheets on Flash Memories, EPROMs, DRAMs and SRAMs contain many comprehensive charts, block diagrams, operating characteristics and programming modes. Application notes have diagrams and hardware design information.



INT210830 2 lbs 1057 pages, 1992 \$19.95

TECH TIP

"Some older motherboards use non-standard memory refresh rates of 128 cycles, and will therefore require 9 chip versions of SIMMs. Most motherboards, especially newer models, use the standard 256 cycle refresh rates and can use 3 or 9 chip SIMMs."
—J.R.

**CALL FOR
Volume Discounts**

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

INTEL OVERDRIVE CO-PROCESSORS

Intel's OverDrive Processors are powerful 486 system performance boosters, designed for a simple yet dramatic upgrade. When you inevitably decide more CPU power is needed, simply plug in the OverDrive Processor and advance to the next generation of CPU technology. Unlike a math co-processor, both integer and math performance increase across all present and future applications, preserving your system investment.

- Allows 486SX systems to utilize 486DX2 speed doubling technology
- Dramatically improves overall system performance
- Designed to be the lowest-cost processor upgrade
- Accelerates both integer and math performance
- Compatible with 50,000 software applications

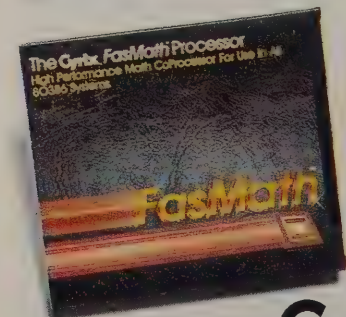


ODP486-SX20 1 lb	\$369.95
For 20MHz 486SX OverDrive socket	
ODP486-SX25 1 lb	\$469.95
For 25MHz 486SX OverDrive socket	
ODP486-DX25 1 lb	\$469.95
Replace 25MHz 486DX with 50MHz DX2	
ODP486-DX33 1 lb	\$599.95
Replace 33MHz 486DX with 66MHz DX2	
ODP486-DX33 1 lb	\$599.95
66MHz 486DX2 for OverDrive socket	

CYRIX MATH CO-PROCESSORS

These new state-of-the-art math co-processors are designed to perform for years to come. The Cyrix Series includes a manual and software guide, as well as a full 5-year unconditional manufacturer's warranty to assure you of non-stop calculating power!

Part #	Speed	Price
83S87-25 (SX)	16-25MHz	74.95
83S87-33 (SX)	16-33MHz	89.95
83D87-33	16-33MHz	89.95
83D87-40	16-40MHz	119.95



Cyrix

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

INTEL MATH CO-PROCESSORS

Intel math co-processors can speed up to over 2,100 powerful applications. Spreadsheets and CAD applications, desktop publishing, charting and graphing applications, databases, statistics and other applications can be improved by up to 500%! Includes easy installation instructions. Backed by Intel's lifetime warranty.

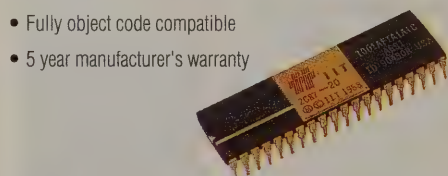


Part #	Speed	Price
8087	5MHz	89.95
8087-2	8MHz	129.95
8087-1	10MHz	169.95
80287-XL	6-12MHz	74.95
80287-XLT	6-12MHz	74.95
80387-DXP	16-33MHz	79.95
80387-SL	16-25MHz	74.95
80387-SXP	16-25MHz	74.95
80387-SX33	16-33MHz	84.95
80487-SX	16-25MHz	369.95
RAPIDCAD-386D	16-33MHz	249.95

IIT MATH CO-PROCESSORS

These advanced math co-processors greatly reduce processing time for calculations. Perfect for CAD, graphic and engineering functions. See our accelerator (above right) for even faster operation!

- 2C87-8 averages 1.8x faster than 80287 (BYTE, Sept. '87)
- Fully Intel 80287 compatible
- Low power consumption—ideal for laptops
- Fully object code compatible
- 5 year manufacturer's warranty



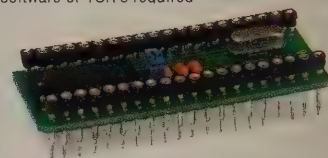
INTEGRATED INFORMATION

Part #	Speed	Price
2C87-8	8 MHz	54.95
2C87-10	10 MHz	54.95
2C87-12	12 MHz	59.95
2C87-20	20 MHz	69.95
3C87SX-25	25 MHz	74.95
3C87SX-33	33 MHz	89.95
3C87DX-25	25 MHz	84.95
3C87DX-33	33 MHz	89.95
3C87DX-40	40 MHz	109.95

CO-PROCESSOR ACCELERATOR

Take advantage of today's fastest co-processors with "2nd Stage." This co-processor accelerator allows up to 20MHz co-processors to run at full-speed in your slowest 286-based systems. Simply plug the accelerator into your motherboard and your co-processor into the accelerator.

- Boosts calculation intensive tasks to 386 level performance
- For 80287 co-processors and compatibles
- Intel, Cyrix and IIT compatible
- No software or TSR's required



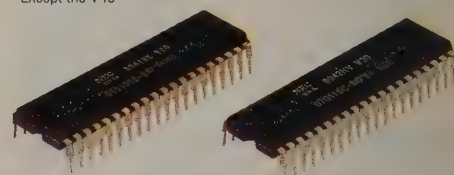
2ND-STAGE-1 1 lb	\$29.95
For 10 and 20 MHz 80287s (i.e., IIT's 2C87-20)	
2ND-STAGE-8 1 lb	\$29.95
For 8 & 16 MHz 80287's	
2ND-STAGE-12 1 lb	\$29.95
For 12 MHz 80287s (i.e., Intel's 80287-XL)	

NEC MICROPROCESSORS

Replacing the 8086 or 8088 microprocessor in your 8088 or compatible with the more efficient NEC V20 or V30 can improve performance by up to 30%! They are functionally identical to the 8086/8088.

- Pin compatible with the 8088*
- Uses superset of 8088 instructions
- High-speed address calculation in hardware
- Low-power CMOS design

*Except the V40



NEC

Part #	NEC Part #	Speed	Replaces	# Pins	Price
V20-8	D70108-8	8MHz	8088-2	40	7.95
V20-10	D70108-10	10MHz	8088-1	40	9.95
V30	D70116-8	8MHz	8086-2	40	9.95
V40	D70208L8	8MHz	N/A	68PLCC	19.95

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CLOCK CIRCUITS

Part #	# Pins	Description	Price
MC146818A	24	Real time clock/RAM	4.29
MC146818P	24	Real time clock/RAM	4.95
MM5369	8	17-stage prog. oscillator/divider	2.49
MM58167	24	Microprocessor compatible clock	6.95
MM58174	16	Microprocessor compatible clock	5.95
MM58274	16	Microprocessor compatible clock	7.95
MSM5832	18	Microprocessor compatible clock	3.79

INTERFACE

Part #	# Pins	Description	Price
DP8304	20	8-bit bi-directional transceiver	2.95
DS8833	16	Quad 3-state bus transceiver	2.49
DS8835	16	Quad inverting bus transceiver	1.99
DS8836	14	Quad NOR unified bus receiver	.99
DS8837	16	Hex unified bus transceiver	1.99
DS8838	16	Quad unified bus transceiver	1.99
8T26	16	Quad 3-state bus transceiver	.99
8T95	16	Hex 3-state buffer/inverter	.89
8T96	16	Hex 3-state buffer/inverter	.89
8T97	16	Hex 3-state buffer/inverter	.89
8T98	16	Hex 3-state buffer/inverter	.89

CRT CONTROLLERS

Part #	# Pins	Description	Price
CRT5037	40	CRT controller	10.95
TMS9918A	40	Video display generator	19.95
6545	40	CRT controller 1MHz	4.29
6545A	40	CRT controller 2MHz	4.95
6845	40	CRT controller 1MHz	2.29
68845	40	CRT controller 2MHz	3.29
6847	40	Color CRT controller	10.95
7220	40	Graphics display controller	13.95
8275	40	Programmable CRT controller	17.95

SOUND CHIPS

Part #	# Pins	Description	Price
AY3-8910	40	Sound generator chip	7.95
AY3-8912	28	Programmable sound generator	6.95
MC3340	8	Electronic attenuator	1.49
6581	28	Commodore SID	12.95

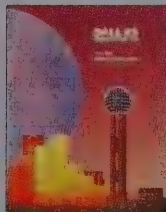
BAUD RATE GENERATORS

Part #	# Pins	Description	Price
COM5016	18	Dual baud rate generator	6.95
COM8116	18	Dual baud rate generator	5.95
14411	24	Baud rate generator	7.59
4702	16	Programmable bit rate generator	9.95

DALLAS DATA BOOK

This book covers very interesting and unique products, including silicon timed circuits, multiport memory, nonvolatile RAM, intelligent sockets, timekeeping, user-insertable memory, secured user-insertable memory, battery backup and battery charges, system extension, SIP STIK™ prefabs, automatic identification, micro-controllers, telecommunications and teleservicing.

DSBOOK 3 lbs 1232 pages, 1992/93 \$16.95



DALLAS

Part #	# Pins	Description	Price
DS1202	8	Serial timekeeping chip	5.95
DS1210	8	Nonvolatile controller chip	7.95
DS1213B	28	Smartsocket 16K/64K	15.95
DS1213C	28	Smartsocket 64K/256K	16.95
DS1213D	32	Smartsocket 64K/256K/1M	18.95
DS1215	16	Phantom time chip	11.95
DS1216B	28	Smartwatch/RAM 16K/64K	24.95
DS1216C	28	Smartwatch/RAM 64K/256K	25.95
DS1216D	32	Smartwatch/RAM 256K/1M	27.95
DS1216E	28	Smartwatch/RAM 64K/256K	24.95
DS1216F	32	Smartwatch/RAM 64K/256K/1M	25.95
DS1220AB*	24	16K Nonvolatile SRAM 200ns	12.95
DS1220AB-100*	24	16K Nonvolatile SRAM 100ns	16.95
DS1220AD**	24	16K Nonvolatile SRAM 200ns	12.95
DS1220AD-100**	24	16K Nonvolatile SRAM 100ns	16.95
DS1220Y**	24	16K Nonvolatile SRAM 200ns	12.25
DS1225AB*	28	64K Nonvolatile SRAM 200ns	18.95
DS1225AB-150*	28	64K Nonvolatile SRAM 150ns	19.95
DS1225AD**	28	64K Nonvolatile SRAM 200ns	18.95
DS1225AD-150**	28	64K Nonvolatile SRAM 150ns	19.95
DS1225Y	28	64K Nonvolatile SRAM 200ns	19.95
DS1225Y-150	28	64K Nonvolatile SRAM 150ns	20.95
DS1227	20	Kickstarter chip	7.49
DS1228	16	+5V Powered dual RS232 transmitter/receiver	6.49
DS1230AB*	28	256K Nonvolatile SRAM 200ns	29.95
DS1230AB-100*	28	256K Nonvolatile SRAM 100ns	39.95
DS1230Y**	28	256K Nonvolatile SRAM 200ns	29.95
DS1230Y-100**	28	256K Nonvolatile SRAM 100ns	39.95
DS1231-20	8	Power monitor chip	5.95
DS1232	8	Micromonitor chip	3.95
DS1233	3	5V Econo Reset, TO-92	2.69
DS1237-1	16	256K DRAM nonvolatizer, 8ms refresh	13.95
DS1243Y	28	64K NV SRAM with phantom clock	29.95
DS1244Y	28	256K Nonvolatile SRAM with phantom clock	44.95
DS1259	16	Battery manager chip	8.95
DS1260	16	Smart battery	16.95
DS1283	28	Watchdog timekeeper chip	16.95
DS1286	28	Watchdog timekeeper chip (contains lithium battery)	19.95
DS1287	24	Real time clock	16.95
DS1287A	24	Real time clock (contains RAM clear pin)	21.95
DS1387	24	RAMified real time clock 4Kx8	24.95
DS1613C	28	Partitioned smartsocket 256K	23.95
DS1613D	32	Partitioned smartsocket 1M	25.95
DS1632	16	PC power fail and reset controller	5.95
DS1667	20	Digital resistor with op amp	11.95
DS1669	8	Dallastat™ elec. digital rheostat	5.49
DS1990	NA	Touch serial number (microcan pack)	4.29
DS1991	NA	Touch multikey (microcan pack)	15.95
DS1992	NA	1K-bit touch memory (microcan pack)	9.29
DS1993	NA	4K-bit touch memory (microcan pack)	13.95
DS9092	NA	Touch memory probe for above microcans	8.95
DS2130	28	Voice messaging processor	19.95
DS2132	28	Dig. answering machine proc.	19.95
DS2400	3	Silicon serial number, TO-92	2.39
DS2404	16	EconoRAM time chip (4K bits SRAM)	9.95

* Vcc=5V±5%, write protect voltage 4.5V-4.75V

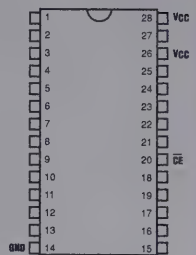
** Vcc=5V±10%, write protect voltage 4.25V-4.5V

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DALLAS DS1213 SMARTSOCKET

The DS1213 SmartSocket has built-in CMOS controller circuits and an embedded lithium energy source. They accept byte-wide CMOS static RAMs. The SmartSocket monitors incoming Vcc for an out-of-tolerance condition.



DS1213B

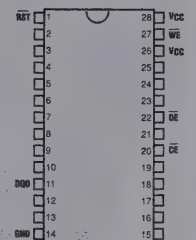
All pins pass through except 20, 26 and 28

- Accepts standard 2Kx8, 8Kx8, 32Kx8, 128Kx8 or 512Kx8 CMOS static RAMs
- Embedded lithium energy cell retains RAM data
- Self-contained circuitry safeguards data
- Data retention time is greater than 10 years
- IC socket permits upgrading from 2K x 8 to 8K x 8, 8K x 8 to 32K x 8 or 8K x 8 to 512K x 8

Part #	# Pins	Description	Price
DS1213B	28	2Kx8/8Kx8	15.95
DS1213C	28	8Kx8/32Kx8	16.95
DS1213D	32	8Kx8/32Kx8/128Kx8/512Kx8	18.95

DALLAS DS1216 SMARTWATCH/RAMS

The DS1216 SmartWatch/RAMs are 0.6" wide DIP sockets with a built-in CMOS watch function, a nonvolatile RAM controller circuit and an embedded lithium energy source. They accept byte-wide CMOS static RAMs. The watch function remains transparent to the RAM. The SmartWatch monitors Vcc for an out-of-tolerance condition.



DS1216B

All pins pass through except 20, 26 and 28

- Keeps track of hundredths of seconds, seconds, minutes, hours, days, date of the month, months and years
- Converts standard 2Kx8, 8Kx8, 32Kx8, 128Kx8 or 512Kx8 CMOS static RAMs into nonvolatile memory
- Embedded lithium energy cell maintains watch information and retains RAM data
- Watch function is transparent to RAM operation

Part #	# Pins	Description	Price
DS1216B	28	2Kx8/8Kx8	24.95
DS1216C	28	8Kx8/32Kx8	25.95
DS1216D	32	8Kx8/32Kx8/128Kx8/512Kx8	27.95

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Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

DATA ACQUISITION

Part #	# Pins	Description	Price
ADC-0800	18	8-bit A/D converter	24.95
ADC-0804	20	8-bit A/D converter	2.95
ADC-0809	28	8-bit A/D conv. 8 channel MUX	3.95
ADC-0816	40	8-bit A/D conv. 16 channel MUX	19.95
ADC-0817	40	8-bit A/D conv. 16 channel MUX	16.95
ADC-0820	20	8-bit hi-speed MPU comp. A/D con.	10.95
ADC-0831	8	8-bit serial A/D converter	4.95
ADC-1205CCJ-1	24	12-bit + sign A/D converter	44.95
DAC-0800	16	8-bit D/A converter	1.89
DAC-0806	16	6-bit D/A converter	1.69
DAC-0808	16	D/A converter (DAC08, MC1408)	1.49
DAC-0830	20	8-bit up D/A converter	7.95
DAC-1020	16	10-bit D/A converter	9.95
DAC-1021	16	10-bit D/A converter	7.95
DAC-1022	16	10 bit D/A converter	7.95
MB40576	16	6-bit ultra hi-speed video A/D Con.	3.95
MB87020	40	16-bit A/D or D/A selec. con. CMOS	26.95
MC1408-6	16	6-bit D/A converter (DAC0806)	1.69
MC1408-8	16	8-bit D/A converter (DAC0808)	1.49
TLC5491P	8	8-bit A/D Converter ± 0.5 lsb	1.95
ZN428E8	16	8-bit D/A converter, latched input	8.95
ZN429E8	14	8-bit D/A converter	3.95
ZN449E	18	8-bit A/D converter, MPU compat.	6.95

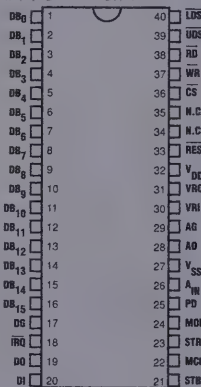
9000 SERIES

Part #	# Pins	Description	Price
9301	16	BCD to Decimal decoder	.29
9304	16	Dual full adder	.69
9316	16	4-bit binary counter	.49
9328	16	8-bit shift register	.99
9334	16	8-bit addressable latch	1.49
9368	16	Hexadecimal to 7-segment driver	2.79
9401	14	CRC generator / checker	5.95
9601	14	Retriggerable mono multivibrator	.89
9602	16	Dual retriggerable mono multivibrator	.69
96S02	16	Retriggerable multivibrator (26S02)	1.45
9637	8	RS232 differential line driver	1.49

FUJITSU'S 16-BIT A/D AND D/A CONVERTER

The MB87020 is a 50kSPS (Kilo Sample Per Second) 16-bit Analog-to-Digital and Digital-to-Analog converter fabricated by Fujitsu Advanced CMOS technology. The MB87020 is synchronous/asynchronous and 8/16-bit oriented.

- A to D or D to A conversion
- High Resolution: 16-bit
- High Linearity: 12-bit
- Interrupt request as conversion complete
- Serial data port available
- On-chip sample and hold circuit for analog input/output
- On-chip reference voltage generator: 2.5V type



MB87020 \$26.95

UARTS

Part #	# Pins	Description	Price
AY3-1015	40	UART	4.95
AY5-1013	40	UART (TR1602)	3.95
IM6402	40	UART	4.95
NS16450	40	16-bit UART	5.95
NS16550	40	High speed 16-bit UART	11.95
TR1602	40	UART (AY5-1013)	3.95
2350	40	UART 500 KHz	4.95
2651	28	Programmable communications interface	4.95
8250	40	Communications interface	5.95
8256	40	Multi-function UART	11.49
8274	40	USART, multi-protocol (UPD7201)	7.95

SIGNETICS SERIES

Part #	# Pins	Description	Price
PLS100	28	Field-prog. logic array (16x48x8), 3-State	11.95
PLS101	28	Field-prog. logic array (16x48x8), open col.	15.95
PLS105	28	Field-prog. logic seq. (16x48x8), 3-State	15.95
PLS153	20	Field-prog. logic array (18x42x10), 3-State	3.45
PLS159	20	Field-prog. logic seq. (16x45x12), 3-State	6.95
PLS173	24	Field-prog. logic array (22x42x10), 3-State	5.95
PLS179	24	Field-prog. logic seq. (20x45x12), 3-State	10.95
82HS321	24	PROM 32,768-bit (4096x8), 3-State	14.95
82S123	16	PROM 256-bit (32x8), 3-State	1.49
82S126	16	PROM 1024-bit (256x4), open collector	1.89
82S129	16	PROM 1024-bit (256x4), 3-State	1.89
82S131	16	PROM 2048-bit (512x4), 3-State	2.89
82S135	20	PROM 2048-bit (256x8), 3-State	3.49
82S137	18	PROM 4096-bit (1024x4), 3-State	3.49
82S141	24	PROM 4096-bit (512x8), 3-State	5.49
82S147	20	PROM 4096-bit (512x8), 3-State	3.79
82S181	24	PROM 8192-bit (2048x4), 3-State	5.29

MISCELLANEOUS

Part #	# Pins	Description	Price
AY5-2376	40	Keyboard encoder/decoder	14.95
AY5-3600PRO	40	Programmable keyboard encoder	9.95
CTS256AL2	28	Speech processor	9.95
HD61603	80*	LCD driver	7.95
TMS99531	14	Phone OTMF & pulse dialer	7.95
TMS99532	18	Texas Instruments modem chip	4.95
11C90	16	Divide by 10/11 Prescaler	19.95
3242	28	FIFO shift register	4.95

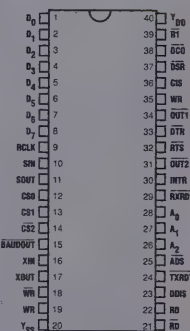
* 80-pin Quad Flat Pak

NS16550 UART

The NS16550 is an improved version of the standard NS16450 device used in many 286/386/486 serial ports. A built-in FIFO allows the device to hold up to 16 characters before the CPU responds, without generating an error. Perfect for multi-tasking environments such as Windows 3.1 and DESQview.

- Runs all existing 16450 software
- After reset, all registers are identical to the 16450 register set
- Input and output includes 16 byte FIFO to prevent over-runs
- Independent receiver clock input

NS16550 \$11.95



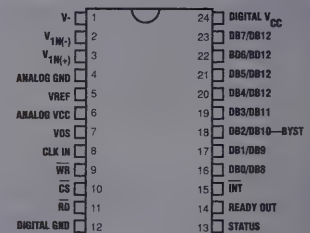
DISK CONTROLLERS

Part #	# Pins	Description	Price
UPD765	40	FDC SD/DD (8272)	3.49
1691	20	Floppy support logic	6.95
1771	40	Floppy disk controller SD	4.95
1791	40	Floppy disk controller (MB8876)	7.95
1793	40	FDC SD/DD (true D bus) (MB8877)	7.95
1797	40	FDC DD/Side select (True)	7.95
2793	40	FDC (1793 w/clock & data separator)	14.95
2797	40	FDC (1797 w/clock & data separator)	29.95
37C65CP	40	FDC w/on-chip data separator	7.95
37C65C+	44	As above, & supports 2.88Mb (PLCC)	11.95
5380	40	SCSI controller (Z05380)	9.95
8272	40	FDC SS/DD (UPD7201)	3.49
9216	8	Floppy disk data separator	5.95

INTERSL/HARRIS

Part #	# Pins	Description	Price
ICL7106CPL	40	3-1/2 digit LCD A/D converter	4.95
ICL7107CPL	40	3-1/2 digit LED A/D converter	4.95
ICL7109CPL	40	12-bit MPU compatible A/D convert	9.95
ICL7660CPA	8	CMOS voltage converter	1.79
ICL7663SCPA	8	CMOS prog. positive volt. reg.	3.95
ICL7665SCPA	8	CMOS micropwr ovr/under volt. det.	3.95
ICL8038CCPD	14	VCO/precision waveform generator	3.69
ICL8211CPA	8	Programmable voltage detector	2.29
ICM7207AIPD	14	CMOS timebase gen 5.24288MHz	7.95
ICM7208IPI	28	7-digit LED display counter	19.95
ICM7216BIPD	28	8-digit universal counter	29.95
ICM7231BFIPL	40	Num./alphanum. triplex. LCD driver	9.95
ICM7555IPA	8	CMOS 555 timer	.79
ICM7556IPD	14	CMOS 556 timer	1.29

12-BIT+ A/D CONVERTER



The ADC-1205 is a CMOS, 12-bit+ successive approximation A/D converter. The 24-pin ADC-1205 outputs the 13-bit data result in two 8-bit bytes, formatted high-byte first with sign extended. Negative numbers are represented in 2's complement data format. All digital signals are fully TTL and MOS compatible. A bipolar input (-5V to +5V) requires the addition of a 5V negative supply.

- Compatible with all μ Ps
- True differential analog voltage inputs
- 0V to 5V analog voltage range with single 5V supply
- TTL/MOS input/output compatible
- Low power - 25mW max
- Resolution - 12 bits plus sign
- Linearity Error - ± 1 LSB
- Conversion Time - 100 μ s

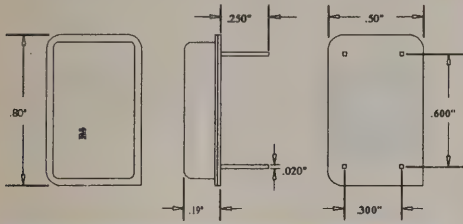
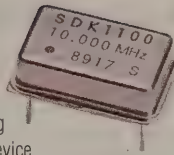
ADC-1205CCJ-1 \$44.95

Specification sheets for most devices are available at \$1.50 each; please specify part # when ordering

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OSCILLATORS

TTL output oscillators are ideal for development work! Test circuits at various speeds by simply swapping one oscillator for another speed device. Fits in standard 14-pin DIP sockets.



Part #	Frequency	Case	1-99	100+
OSC1.0	1.0 MHz	OSC	3.99	3.19
OSC1.8432	1.8432 MHz	OSC	3.99	3.19
OSC2.0	2.0 MHz	OSC	3.99	3.19
OSC2.4576	2.4576 MHz	OSC	3.99	3.19
OSC4.0	4.0 MHz	OSC	3.99	3.19
OSC5.0	5.0 MHz	OSC	3.99	3.19
OSC5.0688	5.0688 MHz	OSC	3.99	3.19
OSC6.0	6.0 MHz	OSC	3.99	3.19
OSC6.144	6.144 MHz	OSC	3.99	3.19
OSC8.0	8.0 MHz	OSC	3.99	3.19
OSC9.6	9.6 MHz	OSC	3.99	3.19
OSC10.0	10.0 MHz	OSC	3.99	3.19
OSC12.0	12.0 MHz	OSC	3.99	3.19
OSC14.31818	14.31818 MHz	OSC	3.99	3.19
OSC15.0	15.0 MHz	OSC	3.99	3.19
OSC16.0	16.0 MHz	OSC	3.99	3.19
OSC16.257	16.257 MHz	OSC	3.99	3.19
OSC18.432	18.432 MHz	OSC	3.99	3.19
OSC20.0	20.0 MHz	OSC	3.99	3.19
OSC24.0	24.0 MHz	OSC	3.99	3.19
OSC25.0	25.0 MHz	OSC	3.99	3.19
OSC30.0	30.0 MHz	OSC	3.99	3.19
OSC32.0	32.0 MHz	OSC	4.75	4.25
OSC33.0	33.0 MHz	OSC	4.75	4.25
OSC36.0	36.0 MHz	OSC	4.75	4.25
OSC40.0	40.0 MHz	OSC	4.75	4.25
OSC48.0	48.0 MHz	OSC	4.75	4.25
OSC50.0	50.0 MHz	OSC	4.75	4.25
OSC64.0	64.0 MHz	OSC	4.75	4.25
OSC66.0	66.0 MHz	OSC	4.75	4.25
OSC80.0	80.0 MHz	OSC	4.75	4.25
OSC100.0	100.0 MHz	OSC	4.75	4.25

CRYSTALS

Crystals can provide an accurate clock source for most digital projects. These piezo-electric devices are extremely stable and are ideal for applications that require precise timing, such as frequency counter timebases.

Part #	Frequency	Case	1-99	100+
32.768KHZ	32.768 KHz	TF	.95	.69
1.0MHZ	1.0 MHz	HC-33	4.95	4.49
SM1.8432	1.8432 MHz	HC-18	2.95	2.55
1.8432MHZ	1.8432 MHz	HC-33	2.39	2.09
2.0MHZ	2.0 MHz	HC-33	1.95	1.60
SM2.0	2.0 MHz	HC-18	2.49	2.19
2.097152MHZ	2.097152 MHz	HC-33	1.09	.89
2.4576MHZ	2.4576 MHz	HC-18	1.09	.89
3.2768MHZ	3.2768 MHz	HC-18	1.09	.89
3.579545MHZ	3.579545 MHz	HC-18	1.09	.89
3.6864MHZ	3.6864 MHz	HC-18	1.09	.89
4.0MHZ	4.0 MHz	HC-18	1.09	.89
4.032MHZ	4.032 MHz	HC-18	1.09	.89
4.9152MHZ	4.9152 MHz	HC-18	1.09	.89
5.0MHZ	5.0 MHz	HC-18	1.09	.89
5.0688MHZ	5.0688 MHz	HC-18	1.09	.89
5.185MHZ	5.185 MHz	HC-18	1.09	.89
5.7143MHZ	5.7143 MHz	HC-18	1.09	.89
6.0MHZ	6.0 MHz	HC-18	1.09	.89
6.144MHZ	6.144 MHz	HC-18	1.09	.89
6.5536MHZ	6.5536 MHz	HC-18	1.09	.89
7.3728MHZ	7.3728 MHz	HC-18	1.09	.89
8.0MHZ	8.0 MHz	HC-18	1.09	.89
9.6MHZ	9.6 MHz	HC-18	1.09	.89
10.0MHZ	10.0 MHz	HC-18	1.09	.29
10.738635MHZ	10.738635 MHz	HC-18	1.09	.89
11.0592MHZ	11.0592 MHz	HC-18	1.09	.89
12.0MHZ	12.0 MHz	HC-18	1.09	.89
14.31818MHZ	14.31818 MHz	HC-18	1.09	.89
15.0MHZ	15.0 MHz	HC-18	1.09	.89
16.0MHZ	16.0 MHz	HC-18	1.09	.89
17.430MHZ	17.430 MHz	HC-18	1.09	.89
18.0MHZ	18.0 MHz	HC-18	1.09	.89
AT18.0	18.0 MHz	HC-25	1.09	.89
18.432MHZ	18.432 MHz	HC-18	1.09	.89
20.0MHZ	20.0 MHz	HC-18	1.09	.89
AT20.0	20.0 MHz	HC-25	1.09	.89
22.1184MHZ	22.1184 MHz	HC-18	1.09	.89
24.0MHZ	24.0 MHz	HC-18	1.09	.89
32.0MHZ	32.0 MHz	HC-18	1.09	.89

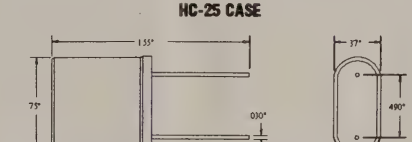
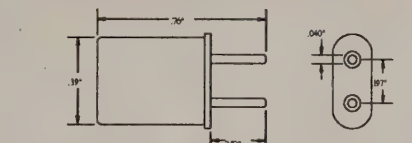
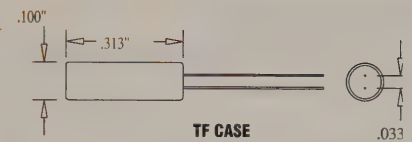
OPTO-ISOLATORS

Protect sensitive digital circuits from the high-power devices they control. These devices include an LED emitter and a photodetector in one package, preventing current flow from 1 side to the other.

Part #	# Pins	Isolation Voltage	1-99	100+
H11C5	6	7.5KV	2.95	2.60
ILQ-74	16	2.5KV	2.95	2.60
MCA-255	6	2.5KV	.99	.89
MCT-2	6	2.5KV	.69	.59
MCT-6	8	2.5KV	1.29	.99
MOC3010	6	7.5KV	1.29	1.19
TIL-111	6	1.5KV	.89	.75
TIL-113	6	1.5KV	.89	.75
4N26	6	1.5KV	.69	.59
4N27	6	1.5KV	.69	.59
4N28	6	.5KV	.69	.59
4N33	6	1.5KV	.89	.75
4N35	6	2.5KV	.89	.75
4N37	6	3.5KV	.99	.79
6N139	8	2.5KV	1.95	1.75

CATALOG OUTLET

1238 S. BASCOM AVE. SAN JOSE, CA
(408) 559-7724 M-F 9-7, SAT 9-5, SUN 12-4



TTL OSCILLATOR

Inexpensive fixed-frequency oscillator uses a 74HC04, three capacitors, a resistor and a crystal. Keep wires as short as possible for reliable performance.

MOTOROLA OPTOELECTRONICS DEVICE DATA BOOK

In the optoelectronics field, Motorola has concentrated on infrared GaAs and GaAlAs emitters, silicon detectors, high-technology optocouplers/isolators, and an innovative approach to fiber optics. This data book contains up-to-date information on the complete product line. A selector guide and industry cross reference follow a general introduction and quality/reliability data. Data sheets are grouped in sections covering Discrete Emitters/Detectors, Fiber Optic Components, Optoisolators/Optocouplers, Slotted Optical Switches and Opto Chips. Includes 82 pages of application notes.

MOT118 1 lb 147 pages, 1989\$6.95

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"...I have dealt with a total of three people in your organization...and I can only say how impressed I am with your company if these people are indicative of the rest of your staff.

In particular, I have found Vicki to be helpful, friendly and having given personal service rather than treating the customer as a non-entity, as have other firms I have had dealings with in the past..."

—Barry Zolt
Grand Duchy of Luxembourg

RESISTORS

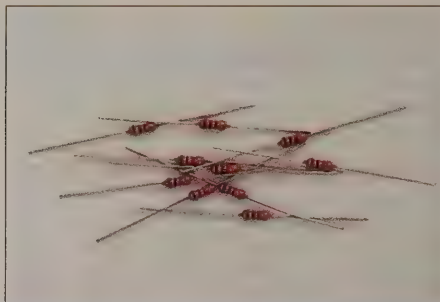
1/4 watt 5% carbon film available in all standard values from 1 ohm to 10 meg ohms.

Pricing:

10 pieces of same value (Minimum Qty.)	.05
100 pieces of same value	.025
1000 pieces of same value	.015

JDR Part #: Rxxx

To order: Insert resistance value in place of "xxx".
For example, a 470K ohm resistor would be R470K.



RESISTOR VALUES

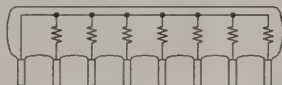
1.0	3.3	10	33	100	330	1.0K	3.3K	10K	33K	100K	330K	1.0M	3.3M
1.1	3.6	11	36	110	360	1.1K	3.6K	11K	36K	110K	360K	1.1M	3.6M
1.2	3.9	12	39	120	390	1.2K	3.9K	12K	39K	120K	390K	1.2M	3.9M
1.3	4.3	13	43	130	430	1.3K	4.3K	13K	43K	130K	430K	1.3M	4.3M
1.5	4.7	15	47	150	470	1.5K	4.7K	15K	47K	150K	470K	1.5M	4.7M
1.6	5.1	16	51	160	510	1.6K	5.1K	16K	51K	160K	510K	1.6M	5.1M
1.8	5.6	18	56	180	560	1.8K	5.6K	18K	56K	180K	560K	1.8M	5.6M
2.0	6.2	20	62	200	620	2.0K	6.2K	20K	62K	200K	620K	2.0M	6.2M
2.2	6.8	22	68	220	680	2.2K	6.8K	22K	68K	220K	680K	2.2M	6.8M
2.4	7.5	24	75	240	750	2.4K	7.5K	24K	75K	240K	750K	2.4M	7.5M
2.7	8.2	27	82	270	820	2.7K	8.2K	27K	82K	270K	820K	2.7M	8.2M
3.0	9.1	30	91	300	910	3.0K	9.1K	30K	91K	300K	910K	3.0M	9.1M
													10M

RESISTOR NETWORKS

Resistor networks provide a neat, efficient means for adding resistors to your project.

8-PIN SIP, 7 RESISTOR

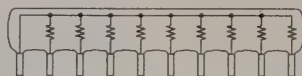
These 8-pin devices are available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm versions.



RPS7-xxx \$.59

10-PIN SIP, 9 RESISTOR

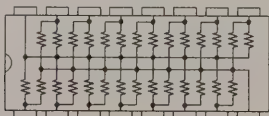
These 10-pin devices can be used in 8 and 9-bit bus configurations. Available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm versions.



RPS9-xxx \$.69

16-PIN DIP, 14-LINE TERMINATOR

These 16-pin DIP resistor packs are used to tie signals to 2 separate voltages through 2 separate resistors. Available in 180/390, 220/270 and 220/330 ohm splits. Replace xxx in part number with the desired values.

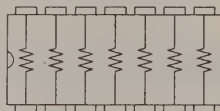


RPD28-xxx/xxx \$1.49

To order: Insert resistance value in place of xxx in part number.
For example, the part number for a 470 ohm 8-Pin SIP, 7 Resistor would be RPS7-470.

14-PIN DIP, 7 RESISTOR

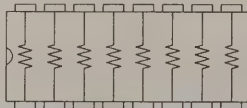
These 14-pin devices are ideal for low-power current limiting applications, such as LED displays. Available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm values.



RPD7-xxx \$.99

16-PIN DIP, 8 RESISTOR

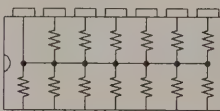
These 16-pin devices can be used in bus current limiting and other applications. Available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm values.



RPD8-xxx \$1.09

14-PIN DIP, 13 RESISTOR

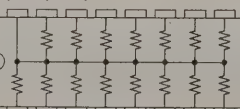
These 14-pin devices are ideal for terminating large numbers of signals. Available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm values.



RPD13-xxx \$.99

16-PIN DIP, 15 RESISTOR

These 16-pin devices can be used in wire wrapped projects by simply inserting into standard DIP wire wrap sockets. Available in 100, 220, 330, 470, 680, 1.0K, 2.2K, 3.3K, 4.7K, 6.8K, 10K, 22K, 33K, 47K and 100K ohm values.

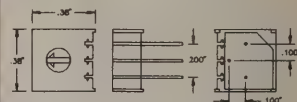
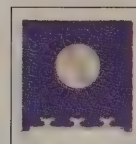


RPD15-xxx \$1.09

POTENTIOMETERS

PCB POTENTIOMETERS

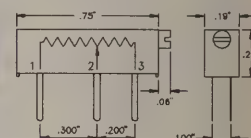
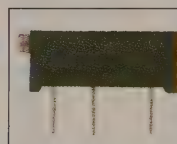
These top-adjusting single-turn Cermet potentiometers require minimal circuit board space. They are ideal for circuits that do not require external control. Available in 100, 200, 500, 1.0K, 2.0K, 5.0K, 10K, 20K, 50K, 100K, 200K, 500K and 1.0M ohm values.



72PRxxx \$.79

15-TURN POTENTIOMETERS

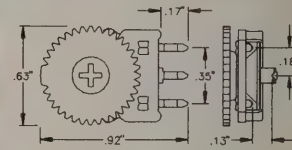
These side-adjusting multi-turn Cermet potentiometers are ideal for circuits requiring precision resistance control. Available in 100, 200, 500, 1.0K, 2.0K, 5.0K, 10K, 20K, 50K, 100K, 200K, 500K and 1.0M ohm values.



89PRxxx \$.99

SIDE-ADJUST POTENTIOMETERS

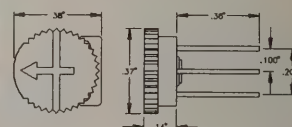
Ideal for applications requiring a finger-adjustable pot attached to the development board. Available in 1.0K, 2.5K, 5.0K, 10K, 25K, 50K, 100K, 250K, 500K ohm values.



91ARxxx \$.99

THUMBWHEEL POTENTIOMETERS

Side-adjust single-turn Cermet potentiometers for PC board use. Available in 100, 200, 500, 1.0K, 2.0K, 5.0K, 10K, 20K, 50K, 100K, 200K, 500K and 1.0M ohm values



THUMB-xxx \$.49

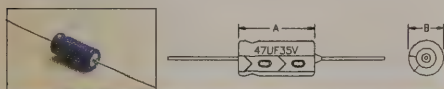
To order: Insert resistance value in place of xxx in part number.
For example, the part number for a 500 ohm 89 Series potentiometer would be 89PR500.

ORDER TOLL FREE
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CAPACITORS

AXIAL ELECTROLYTIC

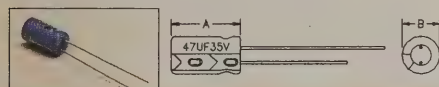
Axial leads should be used for printed circuit applications with restricted height specifications. Electrolytic capacitors are characterized by high capacitance & relatively low cost.



Part #	Value	Volts	"A"	"B"	1-999	1000+
.47A100	.47 μ f	100	.472	.197	.15	.11
1A100	1 μ f	100	.472	.197	.15	.11
2.2A100	2.2 μ f	100	.472	.197	.15	.11
4.7A63	4.7 μ f	63	.472	.197	.15	.11
10A63	10 μ f	63	.472	.236	.16	.12
22A35	22 μ f	35	.472	.236	.16	.12
47A35	47 μ f	35	.630	.236	.17	.13
100A16	100 μ f	16	.630	.236	.19	.14
100A35	100 μ f	35	.630	.315	.22	.19
220A25	220 μ f	25	.669	.394	.25	.19
470A50	470 μ f	50	1.063	.512	.49	.41
1000A16	1000 μ f	16	.827	.394	.45	.38
1000A35	1000 μ f	35	1.063	.512	.65	.57
2200A16	2200 μ f	16	1.063	.512	.65	.55
4700A16	4700 μ f	16	1.457	.630	1.15	1.05

RADIAL ELECTROLYTIC

Radial leads reduce the surface area used by each capacitor but require more height than the axial versions. They are characterized by high capacitance and low cost.



Part #	Value	Volts	"A"	"B"	1-999	1000+
.47R100	.47 μ f	100	.433	.197	.11	.07
1R100	1 μ f	100	.433	.197	.11	.07
2.2R100	2.2 μ f	100	.433	.197	.11	.07
4.7R63	4.7 μ f	63	.433	.197	.11	.07
10R63	10 μ f	63	.433	.197	.12	.07
47R35	47 μ f	35	.433	.248	.13	.08
100R16	100 μ f	16	.433	.248	.15	.09
100R50	100 μ f	50	.591	.315	.19	.15
220R35	220 μ f	35	.630	.394	.20	.13
470R16	470 μ f	16	.492	.394	.25	.16
470R25	470 μ f	25	.630	.394	.27	.19
1000R16	1000 μ f	16	.781	.394	.25	.18
2200R16	2200 μ f	16	1.024	.512	.55	.45
4700R25	4700 μ f	25	1.614	.709	1.25	1.05

MOLDED RF CHOKES

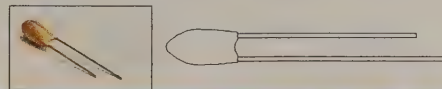
Utilize these chokes in low-power, high-frequency applications. Available in values from 1 μ H to 270 μ H.



Part #	Value	Price
CHK-1	1 μ H	.75
CHK-3.3	3.3 μ H	.75
CHK-10	10 μ H	1.00
CHK-15	15 μ H	1.00
CHK-18	18 μ H	1.00
CHK-22	22 μ H	1.00
CHK-47	47 μ H	1.00
CHK-68	68 μ H	1.00
CHK-100	100 μ H	1.25
CHK-220	220 μ H	1.25
CHK-270	270 μ H	1.25

TANTALUM

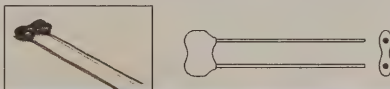
Polarized; designed for DC applications. Fast response. For decoupling high-speed circuits, memory subsystems.



Part #	Value	Volts	1-999	1000+
T.22-35	22 μ f	35	.15	.11
T.33-35	.33 μ f	35	.15	.11
T.47-35	.47 μ f	35	.15	.11
T.68-35	.68 μ f	35	.15	.11
T1.0-15	1 μ f	15	.16	.12
T1.0-35	1 μ f	35	.23	.16
T2.2-15	2.2 μ f	15	.18	.13
T2.2-35	2.2 μ f	35	.25	.18
T3.3-35	3.3 μ f	35	.25	.18
T4.7-15	4.7 μ f	15	.25	.18
T4.7-35	4.7 μ f	35	.35	.26
T6.8-25	6.8 μ f	25	.45	.35
T10-10	10 μ f	10	.45	.35
T10-25	10 μ f	25	.49	.37
T10-35	10 μ f	35	.63	.55
T15-15	15 μ f	15	.65	.59
T22-10	22 μ f	10	.45	.39
T22-15	22 μ f	15	.59	.52
T33-25	33 μ f	25	1.15	.99
T47-25	47 μ f	25	1.95	1.79

SILVER MICA

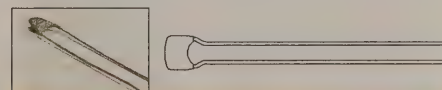
These non-polarized devices are designed for use in RF circuits. Very stable; ideal for precision applications.



Part #	Value	Volts	1-999	1000+
SM-10	10 pf	300	.21	.16
SM-12	12 pf	300	.21	.16
SM-22	22 pf	300	.21	.16
SM-27	27 pf	300	.21	.16
SM-30	30 pf	300	.21	.16
SM-33	33 pf	300	.21	.16
SM-39	39 pf	300	.21	.16
SM-47	47 pf	300	.21	.16
SM-56	56 pf	300	.21	.16
SM-68	68 pf	300	.25	.19
SM-82	82 pf	300	.25	.19
SM-100	100 pf	300	.25	.19
SM-120	120 pf	300	.35	.25
SM-180	180 pf	300	.35	.25
SM-220	220 pf	300	.35	.25
SM-330	330 pf	300	.35	.25
SM-470	470 pf	300	.35	.25
SM-510	510 pf	300	.55	.45
SM-560	560 pf	300	.55	.45
SM-620	620 pf	300	.55	.45
SM-680	680 pf	300	.59	.48
SM-820	820 pf	300	.59	.48
SM-1000	1000 pf	100	.69	.55

MONOLITHIC

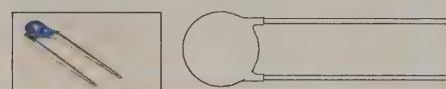
High-capacitance per unit volume; high-reliability and resistance to damp heat. For developing outdoor equipment.



Part #	Value	Volts	1-999	1000+
.01UF-MONO	.01 μ f	50	.14	.09
.047UF-MONO	.047 μ f	50	.15	.10
.1UF-MONO	.1 μ f	50	.18	.12
.47UF-MONO	.47 μ f	50	.25	.16

CERAMIC DISC

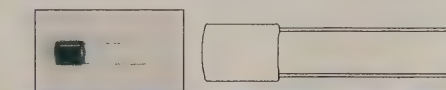
These ceramic disc capacitors offer low losses over a wide frequency range, a high stability of capacitance and a linear temperature coefficient of capacitance.



Part #	Value	Volts	1-999	1000+
10PF	10 pf	50	.05	.038
22PF	22 pf	50	.05	.038
27PF	27 pf	50	.05	.038
33PF	33 pf	50	.05	.038
47PF	47 pf	50	.05	.038
56PF	56 pf	50	.05	.038
68PF	68 pf	50	.05	.038
82PF	82 pf	50	.05	.038
100PF	100 pf	50	.05	.038
220PF	220 pf	50	.05	.038
330PF	330 pf	50	.05	.038
470PF	470 pf	50	.05	.038
560PF	560 pf	50	.05	.038
680PF	680 pf	50	.05	.038
820PF	820 pf	50	.05	.038
.001UF	.001 μ f	50	.05	.038
.0015UF	.0015 μ f	50	.05	.038
.0022UF	.0022 μ f	50	.05	.038
.005UF	.005 μ f	50	.05	.038
.01UF	.01 μ f	50	.07	.049
.02UF	.02 μ f	50	.07	.049
.05UF	.05 μ f	50	.07	.049
.1UF	.1 μ f	12	.10	.06
.1UF-50	.1 μ f	50	.12	.07

MYLAR (POLY FILM) CAPS

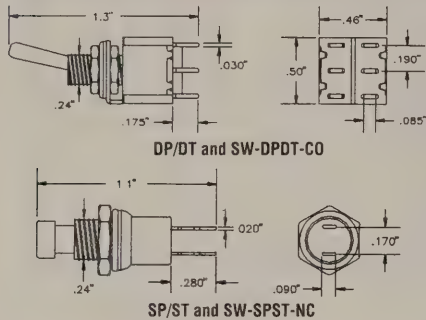
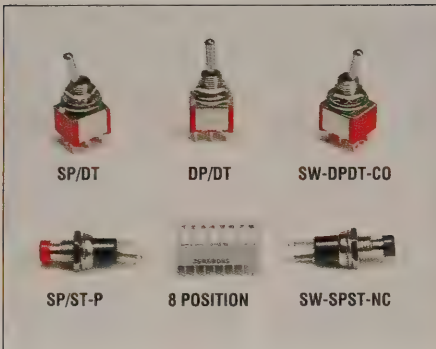
Mylar capacitors, also known as polyester film capacitors, are ideal for bypass and coupling in DC circuits. Features include non-inductive construction, volumetric efficiency.



Part #	Value	Volts	1-999	1000+
M.001	.001 μ f	100	.08	.055
M.0015	.0015 μ f	100	.08	.055
M.0022	.0022 μ f	100	.08	.055
M.0033	.0033 μ f	100	.09	.065
M.0047	.0047 μ f	100	.09	.065
M.0068	.0068 μ f	100	.09	.065
M.01	.01 μ f	100	.09	.065
M.015	.015 μ f	100	.11	.085
M.022	.022 μ f	100	.11	.085
M.033	.033 μ f	100	.13	.100
M.039	.039 μ f	100	.13	.100
M.047	.047 μ f	100	.13	.100
M.068	.068 μ f	100	.16	.120
M.082	.082 μ f	100	.16	.120
M.1	.1 μ f	100	.16	.120
M.12	.12 μ f	100	.23	.170
M.15	.15 μ f	100	.23	.170
M.18	.18 μ f	100	.23	.170
M.22	.22 μ f	100	.23	.170
M.27	.27 μ f	100	.25	.190
M.33	.33 μ f	100	.25	.190
M.39	.39 μ f	100	.29	.230
M.47	.47 μ f	100	.29	.230
M1	1.0 μ f	100	.52	.420

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SWITCHES AND DIP SWITCHES



SWITCHES

These low-power miniature switches are ideal for digital circuits. All include panel mounting hardware.

Part #	Description	Price
SP/DT	Mini toggle on-on	1.25
DP/DT	Mini toggle on-on	1.29
SW-DPDT-CO	Mini toggle on-off-on	1.29
SP/ST-P	Mini pushbutton-open	.39
SW-SPST-NC	Mini pushbutton-closed	.39

DIP SWITCHES

Use these switches to set up and program your digital circuits. Mount in standard 0.3" spaced DIP sockets.

Part #	File	Price
4 POSITION	8-pin 0.3" DIP sockets	.79
5 POSITION	10-pin 0.3" DIP sockets	.89
6 POSITION	12-pin 0.3" DIP sockets	.89
7 POSITION	14-pin 0.3" DIP sockets	.95
8 POSITION	16-pin 0.3" DIP sockets	.95
10 POSITION	20-pin 0.3" DIP sockets	1.29
12 POSITION	24-pin 0.3" DIP sockets	1.49

MOTOROLA ZENER/TRANSIENT DATA SPECIFICATIONS

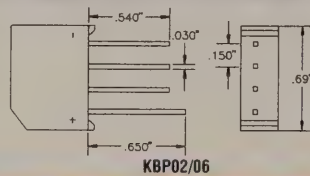
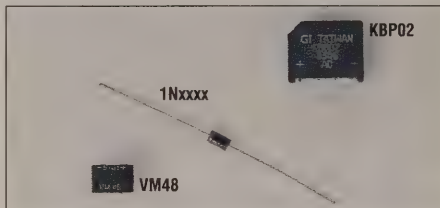
Transient Voltage Suppressors and Zener Device Data presents technical data for Motorola Transient Voltage Suppressors and Zener Diodes. Includes data sheets, a comprehensive Selector Guide and Industry Cross-Reference Guide. This data book includes theory and applications information in addition to the actual product specific data. Includes sections on the 3 major categories of Zener Diodes: Regulation, Temperature Compensation and Transient Voltage Protection.



MOT150 1 lb 449 pages, 1992\$6.95

DIODES

Rectifier diodes pass positive currents, and inhibit negative currents. Bridges convert AC to DC (ideal for power supplies). Use a Zener diode as a voltage reference source.



Part #	Type	PIV	Volts	Ambs	Price
KBP02	Bridge	200	—	1.5	.45
KBP06	Bridge	600	—	1.5	.65
VM48	Bridge	400	—	0.8	.45
1N4001	Rectifier	50	—	1.0	.08
1N4003	Rectifier	200	—	1.0	.10
1N4004	Rectifier	400	—	1.0	.10
1N4006	Rectifier	600	—	1.0	.12
1N4007	Rectifier	1000	—	1.0	.14
1N4148	Switching	75	—	0.5	.04
1N4733	Zener	5.1	1.0	—	.25
1N4736	Zener	6.8	1.0	—	.27
1N5400	Rectifier	50	—	3.0	.22
1N5402	Rectifier	200	—	3.0	.25
1N5404	Rectifier	400	—	3.0	.29
1N5406	Rectifier	600	—	3.0	.35
1N746	Zener	3.3	0.4	—	.25
1N751	Zener	5.1	0.4	—	.15
1N759	Zener	12	0.4	—	.15

MOUNTING HARDWARE



Part #	Description	Price
HS-220	Heat sink TO-220 screw-on	.35
HS-220C	Heat sink TO-220 clip-on	.35
HS-3	Heat sink TO-3 screw-on	.95
TO-3	TO-3 socket	.39
INS-220	Insulator TO-220 (Package of 10)	1.00
INS-3	Insulator TO-3 (Package of 10)	1.00

MOTOROLA POWER MOSFET TRANSISTOR DATA

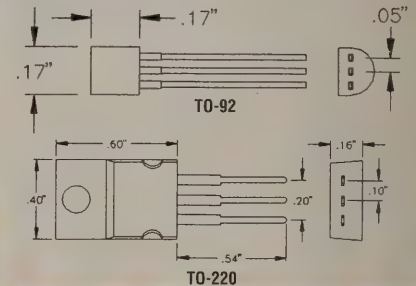
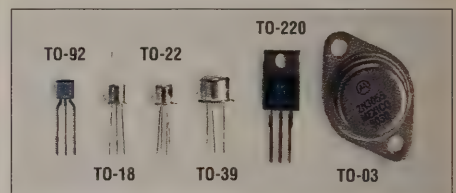
Power MOSFETs offer switching speeds, simpler gate drive requirements and a reduced need for snubber circuits and low ON-voltages. This book provides a comprehensive Selector Guide by package and complete data sheets on Motorola's TMOS Power MOSFETs.



MOT135 1 lb 276 pages, 1992\$11.95

TRANSISTORS

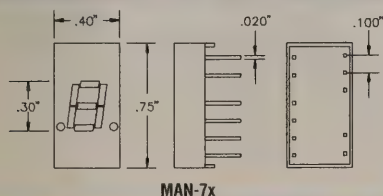
From high-power Darlington to low-power RF devices for applications ranging from switching to amplification.



Part #	Type	Case	Price
MPF102	JFET N-channel	TO-92	.49
MPS-A05	NPN medium power	TO-92	.19
MPS-A06	NPN medium power	TO-92	.19
MPS-A13	NPN Darlington	TO-92	.23
MPS-A55	PNP medium power	TO-92	.19
MPS2369	NPN saturated switches	TO-92	.25
MPS3638	PNP gen. pur. amp/sw.	TO-92	.19
MPS3704	NPN gen. pur. amp/sw.	TO-92	.15
MPS3706	NPN gen. pur. amp/sw.	TO-92	.15
MPQ2222	NPN gen. pur. quad	14-PIN DIP	1.19
MPQ2907	PNP gen. pur. quad	14-PIN DIP	1.19
PN2222	NPN gen. pur. amp/sw.	TO-92	.10
PN2907	PNP gen. pur. amp/sw.	TO-92	.13
PN5139	PNP gen. pur. amp/sw.	TO-92	.19
TIP29	NPN 1A power	TO-220	.49
TIP30	PNP 1A power	TO-220	.49
TIP31	NPN 3A power	TO-220	.49
TIP32	PNP 3A power	TO-220	.49
TIP41	NPN 6A power	TO-220	.69
TIP42	PNP 6A power	TO-220	.69
TIP102	NPN 8A power Darlington	TO-220	.79
TIP105	PNP 8A power Darlington	TO-220	.79
2N918	NPN RF amp/osc.	TO-39	.45
2N2218	NPN gen. pur. amp/sw.	TO-39	.45
2N2218A	NPN gen. pur. amp/sw.	TO-39	.49
2N2219	NPN gen. pur. amp/sw.	TO-39	.45
2N2219A	NPN gen. pur. amp/sw.	TO-39	.49
2N2222A	NPN gen. pur. amp/sw.	TO-18	.25
2N2484	NPN low level amp	TO-18	.25
2N2905	PNP gen. pur. amp/sw.	TO-39	.39
2N2907A	PNP gen. pur. amp/sw.	TO-18	.25
2N3055	NPN 15A power	TO-3	.79
2N3414	NPN gen. pur. amp/sw.	TO-92	.19
2N3563	NPN RF amp/osc.	TO-92	.40
2N3772	NPN 20A power	TO-3	1.85
2N3866	NPN RF low power	TO-39	1.39
2N3903	NPN gen. pur. amp/sw.	TO-92	.10
2N3904	NPN gen. pur. amp/sw.	TO-92	.10
2N3906	PNP gen. pur. amp/sw.	TO-92	.10
2N4122	PNP gen. pur. amp/sw.	TO-92	.25
2N4123	NPN gen. pur. amp/sw.	TO-92	.19
2N4249	PNP low level amp	TO-92	.19
2N4304	NPN low level amp	TO-92	.49
2N4400	NPN gen. pur. amp/sw.	TO-92	.19
2N4401	NPN gen. pur. amp/sw.	TO-92	.19
2N4402	PNP gen. pur. amp/sw.	TO-92	.19
2N4403	PNP gen. pur. amp/sw.	TO-92	.19
2N4857	JFET N-channel	TO-18	.99
2N5086	PNP low level amp	TO-92	.19
2N5209	NPN low level amp	TO-92	.19
2N6043	NPN 8A power Darlington	TO-220	.99
2N6045	NPN 8A power Darlington	TO-220	.99
2955T	PNP 10A power	TO-220	.89
3055T	NPN 10A power	TO-220	.69

7-SEGMENT DISPLAYS

Choose between one and two digit LED displays in red or green. Available in common anode and common cathode configurations.



Part #	Char Size	Digits	Decimal	Common	Color	Price
FND-357	.375"	1	Right	Cathode	Red	1.09
FND-500	.50"	1	Right	Cathode	Red	1.09
FND-507	.50"	1	Right	Anode	Red	1.09
MAN72	.30"	1	Left	Anode	Red	.99
MAN74	.30"	1	Right	Cathode	Red	.99
TIL-311*	.30"	1	Right/Left	4 x 7	Red	9.95
MAN52	.30"	1	Left	Anode	Green	1.09
MAN54	.30"	1	Right	Cathode	Green	1.09
MAN6710	.56"	2	Right	Anode	Red	1.49
MAN6740	.56"	2	Right	Cathode	Red	1.49

*With hexadecimal counter, latch decoder and driver logic included

TIL-311 HEXADECIMAL DISPLAY WITH LOGIC

This hexadecimal display contains a 4-bit latch, decoder, driver and 4x7 light-emitting-diode (LED) character with two externally driven decimal points in a 14-pin package.

- 0.3" character height; high brightness
- Left and Right-hand decimals
- Separate LED and logic power supplies may be used
- Wide Viewing Angle
- Internal TTL MSI chip with Latch, Decoder, and Driver
- Operates from 5-Volt supply



TIL-311\$9.95

BLUE LED

Our new blue LED with water clear lens adds color and provides an alternate to red, green, orange and yellow LEDs. Make your interface more user-friendly!

- T1-3/4 case (5mm)
- Silicon Carbide 470nm emitter
- Typical output: 1.0mcd

LED-JB\$2.25

LIQUID CRYSTAL DISPLAYS

3-1/2 DIGIT LCD

- 0.5" digit height; 3-1/2 digits; 3 decimal points, 1 colon, icons
- Glass size: 2"L x 1.2"H, reflective
- Solid dark segments on light background
- 40-pin package--0.1" spacing
- Ready to mount--no connector type required
- Recommended driver: ICL7106CPL \$4.95



LCD1016 1 lb\$7.95

4 DIGIT LCD

- 0.5" digit height
- 4 digits; 3 decimal points, 1 colon
- Glass size: 2"L x 1.2"H, reflective
- Solid dark segments on light background
- 40-pin package--0.1" spacing
- Ready to mount--no connector type required
- Recommended driver: HD61603 \$7.95



LCD1017 1 lb\$7.95

4 DIGIT LCD

- 1.0" digit height; 4 digits, 3 decimal points, 1 colon
- Glass size: 3.7"L x 1.8"H, reflective
- 40-pin package--0.1" spacing
- Solid dark segments on light background
- Ready to mount--no connector type required
- Recommended driver: HD61603 \$7.95



LCD1152 1 lb\$15.95

8 DIGIT LCD

- 0.5" digit height; 8 digits, 7 decimal points, 3 colons
- Glass size: 3.695"L x 1.2"H, reflective
- 68-pin package--0.1" spacing
- Solid dark segments on light background
- Ready to mount--no connector type required
- Recommended driver: ICM7231BFIPL \$9.95

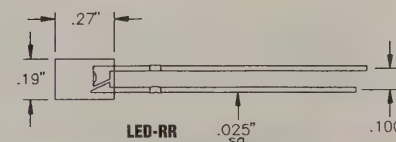
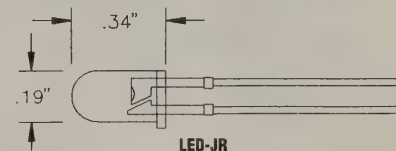
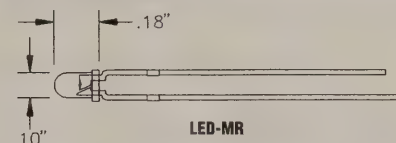
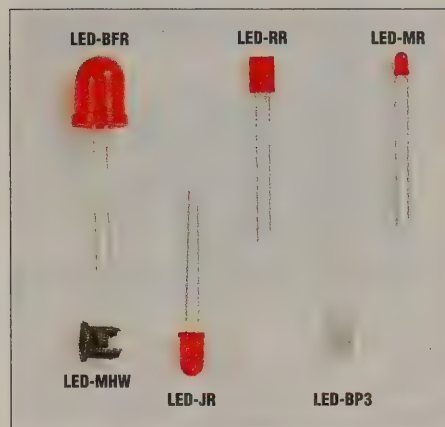


LCD1057 1 lb\$15.95

CALL FOR
Volume Discounts

LIGHT EMITTING DIODES

Ideal for indicating status, we feature round and rectangular LEDs in red, green, yellow and blue. Use flashing and bipolar devices for maximum attention.



Part #	Description	Size	Price
LED-JR	Jumbo Red	T1-3/4 (5mm)	.10
LED-JG	Jumbo Green	T1-3/4 (5mm)	.14
LED-JY	Jumbo Yellow	T1-3/4 (5mm)	.14
LED-JB	Jumbo Blue*	T1-3/4 (5mm)	2.25
LED-MHW	Mounting hardware	T1-3/4 (5mm)	.10
LED-MR	Mini Red	T1 (3mm)	.10
LED-MG	Mini Green	T1 (3mm)	.18
LED-MY	Mini Yellow	T1 (3mm)	.18
LED-RR	Rectangular Red	2 x 5mm	.21
LED-RG	Rectangular Green	2 x 5mm	.25
LED-RY	Rectangular Yellow	2 x 5mm	.25
LED-BR	Extra large Red	10mm	.39
LED-BG	Extra large Green	10mm	.49
LED-BY	Extra large Yellow	10mm	.49
LED-FR	Flashing Red	T1-3/4 (5mm)	.49
LED-FG	Flashing Green	T1-3/4 (5mm)	.59
LED-FY	Flashing Yellow	T1-3/4 (5mm)	.59
LED-BFR	Extra Lg Red Flashing	10mm	1.29
LED-BP2	Bi-Polar 2 lead	T1-3/4 (5mm)	.39
LED-BP3	Bi-Polar 3 lead	T1-3/4 (5mm)	.39

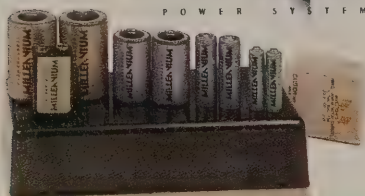
*Water clear blue

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GATES NICAD BATTERIES

Gates Millennium rechargeable power cells provide up to 33% more run time than traditional rechargeables. They recharge in only 3 hours using Gates 4-cell Rapid Charger! Batteries come with Gates' exclusive lifetime replacement guarantee.

RECHARGEABLE
MILLENNIUM™
POWER SYSTEM

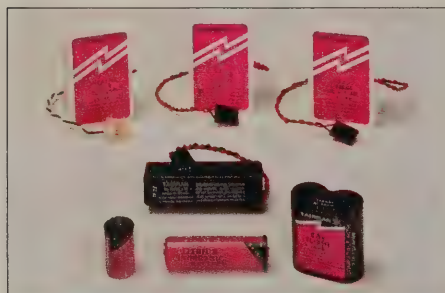


Part #	Battery Type	Qty	Sh. Wt.	Price
B2AAA-BP	AAA	2	1 lb	6.89
B2AA-BP	AA	2	1 lb	6.89
B4AA-BP	AA	4	1 lb	12.95
B2C-BP	C	2	1 lb	7.99
B2D-BP	D	2	1 lb	7.99
B9V-BP	9V	2	1 lb	7.99

CH4C3 2 lbs \$24.95
4-cell battery charger

LONG-LIFE LITHIUM REPLACEMENT BATTERIES

There's nothing worse than having your battery fail in the middle of an important project! These lithium batteries have a long life, but ultimately, they too wear out, so purchase a spare as "insurance." We carry a wide selection to meet most computer needs; see chart below.



JDR Part #	Tadiran #	Replaces	
LITHIUM-6V	TL-5293W	Most 286 and 386's	10.95
LITHIUM-6.8V	TL-5253C	Most 286 and 386's	11.95
LITHIUM-7.2V	TL-5280W	Most 286 and 386's	12.95
LITHIUM-2	TL-5311	PS/2 50, 60, 70, 80, and more	12.95
LITHIUM-LT	TL-5114	Toshiba T1100, T200, Zenith, old Compaq	9.95
LITHIUM-3.6V	TL-5242W	Toshiba T3100, T3200, T5200, Compaq port. 286/386	7.95
LITHIUM-1/2AA	TL-5112	Mac SE, IIE	7.95

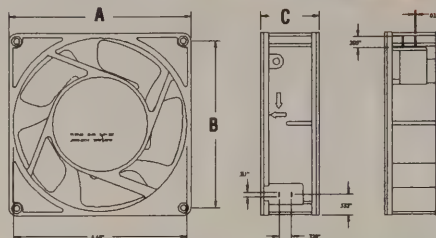
Shipping weight 1 lb

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CATALOG OUTLET
1238 S. BASCOM AVE. SAN JOSE, CA
(408) 558-7724 M-F 8-7, SAT 8-5, SUN 12-4

MUFFIN FANS

These quiet, reliable muffin fans come in a variety of useful sizes.



Part #	A**	B	C	CFM*	Voltage	Price
MUFFIN-DCX	3.15"	2.81"	1"	32	12VDC	16.95
MUFFIN-DCA	3.63"	3.25"	1"	47	12VDC	16.95
MUFFIN-3	3.63"	3.25"	1"	30	115VAC	12.95
MUFFIN-4	4.71"	4.13"	1.5"	50	115VAC	14.95
MUFFIN-ROTRON	3.15"	2.81"	1.5"	34	115VAC	12.95

* Cubic Feet per Minute

** Size is determined by spacing between mounting holes and thickness
Shipping weight 2 lbs

TRANSFORMERS

Wall-mount transformers plug directly into your AC outlet. Can be used for project development or replacement purposes. Choose the power and plug characteristics required.



Part #	Input	Output	Plug Type	Price
CXP-4PW*	115 VAC	5 VDC @ 600mA	2.1mm A	12.95
TR09-DC	110 VAC	9 VDC @ 500 mA	2.1mm A	4.95
TR12-DC	110 VAC	12 VDC @ 500 mA	2.1mm A	4.95
TR12-EURO	220 VAC	12 VAC @ 1 A	2.1mm A	10.95
TR12-250	110 VAC	12 VAC @ 250 mA	3.5mm B	4.95
TR12-500	110 VAC	12 VAC @ 500 mA	3.5mm B	4.95
TR12-1	110 VAC	12 VAC @ 1 A	3.5mm B	5.95
TR12-2	110 VAC	12 VAC @ 2 A	3.5mm B	7.95
TR-STAR	110 VAC	** @ 500mA	Star Plug	5.95

* Regulated

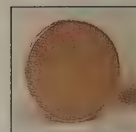
** 3, 4.5, 6, 7.5, 9, 12VDC

A = Female B = Male

Shipping weight 2 lbs

3V LITHIUM BATTERY

Coin-type 3 volt lithium battery for use in motherboards and interface cards. Standard .906" diameter.



LITHIUM-3V 1 lb \$1.95

BATTERY SOCKET

Designed for .906" diameter coin-type batteries, such as our LITHIUM-3V sold above.



3V-MHW 1 lb \$1.49

9V BATTERY SNAP

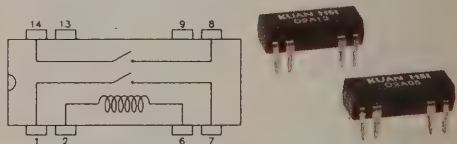
- Snap-on clip for standard 9V type battery
- 6" color coded leads



9V-SNAP 1 lb \$.29

DIP REED RELAYS

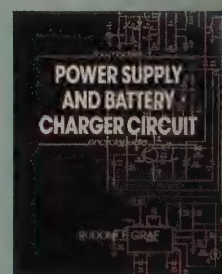
These printed circuit board relays are ideal for low-power applications. Use to drive high-power relays or switch low-power signals. Available in 5 and 12 VDC models. Fit in standard 14-pin DIP sockets.



Part #	Voltage	Current	Contacts	Sh. wt.	Price
RELAY-DIP	5VDC	500mA	DPST	1 lb	3.95
RELAY-DIP12	12VDC	500mA	DPST	1 lb	3.95

TAB BOOKS POWER SUPPLY AND BATTERY CHARGER CIRCUIT ENCYCLOPEDIA

This book provides fast, easy access to more than 250 practical, ready-to-use circuit designs that represent state-of-the-art circuit technology. It covers the entire range of power supplies, including fixed, high voltage, variable, power supply monitors, and power supply protection circuits. It includes circuit designs for battery chargers that can be used with batteries of different voltages and chemistries.



TAB39233 1 lb 144 pages, 1992 \$10.95

LOGIC PROBE

Detect signal transitions within your circuits. Use with Pulser probe (sold below).



- Input Impedance: 1 M Ω
- Max Frequency: 17 MHz, Min Pulse Width: 30ns
- Logic 1 Levels: TTL 2.3V \pm 0.2V, CMOS 70% Vcc
Logic 0 Levels: TTL 0.8V \pm 0.2V, CMOS 30% Vcc
- Overload protection: \pm 220V DC/AC
- Red/Green LED indicates high/low
- 6.5"L x .75"W x 1.0"H

LP-100 1 lb\$17.95

PULSER PROBE

For trouble-shooting or testing logic circuits. Injects a signal into your circuit to be analyzed by a logic probe (sold above) for signal transitions.



- Frequencies: 0.5Hz & 400Hz, switchable
- Pulse Width: 10ms at 100mA load
- Output Current: 10mA sink/ source. Output-90% squarewave: 5mA sink/source
- Compatible with TTL, DTL, RTL, HTL, MOS and CMOS
- 1 M Ω Sync Impedance
- Power Supply: 3-15V
- 6.5"L x .75"W x 1.0"H

LP-200 1 lb\$19.95

83 WATT SUPPLY FOR APPLE II

- +5V @ 6A, +12V @ 3A,
-5V @ 1A, -12V @ 1A



- 9.5"L x 3.5"W x 2.125"H
- Replaces original Apple II, II+ and IIe supplies
- 14" connector cable, 6-foot power cord

PS-A 3 lbs\$59.95

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LOW COST POWER SUPPLIES

35 WATT POWER SUPPLY

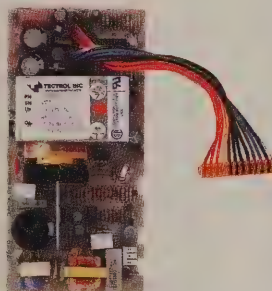
- +5V @ 2.5A, +12V @ 1.5A, -12V @ 0.5A
- 5.75"L x 3.5"W x 1.5"H
- 110/220 VAC @ 50/60Hz input
- Open framed power supply
- Removed from new equipment
- Limited quantity



PS-KFD25E 3 lbs\$14.95

40 WATT SUPPLY

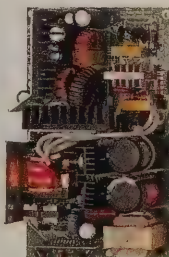
- +5V @ 4.8A,
+12V @ 1.1A,
-5V @ 0.34A,
-12V @ 0.12A
- 7"L x 3.5"W x 2"H
- Open-framed switching supply
- 100-125 VAC @ 50/60 Hertz input
- Limited quantity



PS-TC24 3 lbs\$19.95

112 WATT SWITCHING SUPPLY

- +5V @ 10A, +12V @ 3.5A,
+12V @ 1.5A, -12V @ 200mA
- 5"L x 8.5"W x 1.97"H
- Open framed power supply
- Limited quantity



PS-DPS-110AP 3 lbs\$24.95

ZENITH 45 WATT SWITCHING SUPPLY

- +5V @ 3A, +12V @ 2A,
-12V @ 0.5A
- 115/230 VAC @ 50/60HZ input
- 6-1/4"L x 4"W x 1-7/8"H
- Open-framed switching supply
- UL/CSA approved
- Limited quantities



PS2041045 3 lbs\$19.95

EMI FILTER

Reduces line noise caused by electromagnetic line-to-ground interference. For computer-grade electronic applications.

- 3-pronged filter
- 3A @ 115/250VAC
- Quick disconnect/solder terminals



EMI-FILTER 1 lb\$4.95

3-WIRE LINE CORD

6-ft. power cable has a standard 3-prong male end and 3 insulated wires on the other end.



LC-3 1 lb\$1.95

LC-2 1 lb\$1.49
2-wire line cord

HP-TYPE LINE CORD

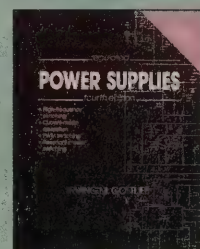
Works with PC power supplies and monitors. The 6-ft. long power cable has a standard 3-prong male end and an HP-type female end.



LC-HP 1 lb\$3.95

TAB BOOKS REGULATED POWER SUPPLIES BOOK

Regulated power supplies provide the constant voltages needed for many modern solid-state devices. Geared to regulated power supply design, testing and implementation, this hefty volume explains regulation techniques, static and dynamic characteristics.



TAB25399 2 lbs: 472 pages, 1992\$24.95

"...I am more than ever convinced that absolute-customer-satisfaction is your watch-word. I thank you."

—Jimson Odufuye
Osbodi, Lagos, Nigeria

20MHz OSCILLOSCOPE

Hitachi's 20MHz dual-trace oscilloscope makes circuit troubleshooting easy. Features include a bright 6" display, TV filters for viewing horizontal and vertical sync signals, high-impedance inputs and an easy-to-use front panel. The internal graticule improves measurement accuracy.



- DC to 20MHz maximum bandwidth
- 1mV/div sensitivity using x5 magnifier, 17.5ns rise time
- Two 1M ohm impedance channels plus Z-axis input
- Display modes include CH1, CH2 (normal or inverted), Alternate, Chopped and Added
- 0.2us/div to 0.2s/div timebase in 19 calibrated steps
- Auto, Normal, TV-H and TV-V trigger sources
- Internal, Line and External trigger sources
- Two 10x probes included
- 6" diagonal screen with P31 phosphor and internal graticule
- Input Power 110/220 VAC, 50/60Hz
- Size 5.2"H x 12.4"W x 14.8"D

V-212 15 lbs\$399.95

40MHz OSCILLOSCOPE

Hitachi's 40MHz dual-trace oscilloscope combines the features and quality you'd expect in more expensive models! The fast 8.8ns rise time, wide bandwidth and 1mV/div sensitivity make this unit a powerful diagnostic tool for both engineers and technicians. The included TV signal filters make viewing TV sync signals clear and easy.



- DC to 40MHz maximum bandwidth
- 1mV/div sensitivity using x5 magnifier, 8.8ns rise time
- Two 1M ohm impedance channels plus Z-axis input
- Display modes include CH1, CH2 (normal or inverted), Alternate, Chopped and Added
- 0.2us/div to 0.2s/div timebase in 19 calibrated steps
- Auto, Normal, TV-H and TV-V trigger sources
- Internal, Line and External trigger sources
- Two 1x/10x probes included
- 6" diagonal screen with P31 phosphor and internal graticule
- Input Power 110/220 VAC, 50/60Hz
- Size 5.2"H x 12.4"W x 14.8"D

V-422 15 lbs\$699.00

100MHz ANALOG OSCILLOSCOPE

This high speed oscilloscope includes an on screen digital readout to make measurements quicker! Now it's easier than ever to measure various waveform characteristics! The cursors feature allows you to place 2 lines on your waveform, and the display will immediately provide you with the voltage difference, time difference or the frequency. A trigger output can be used to control other bench equipment.



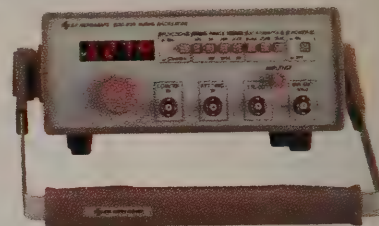
- DC to 100MHz maximum bandwidth
- 2mV/div to 5V/div sensitivity, using 3.5ns rise time
- Two 1M ohm impedance channels plus Z-axis input
- Cursors measure voltage difference, time difference and frequency digitally on-screen
- Display modes include CH1, CH2 (normal or inverted), Alternate, Chopped, Added and Differential
- 0.2us/div to 0.2s/div timebase in 19 calibrated steps
- Auto, Normal, TV-H and TV-V trigger sources
- Internal, Line and External trigger sources
- Two 1x/10x probes included
- 6" diagonal screen with P31 phosphor and internal graticule
- Input Power 110/220 VAC, 50/60Hz
- Size 5.1"H x 10.8"W x 14.2"D

V-1065 15 lbs\$1495.00

V-6045A 16 lbs\$2995.00
100MHz Digital Storage Oscilloscope with Save, Restore and Compare

AUDIO OSCILLATOR AND COUNTER

This audio oscillator generates signals in 4 ranges and is ideal for repair, test or design use. Suitable for radio wave and TV applications.

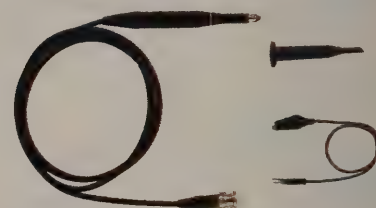


- 10Hz-1MHz, 25mV rms sensitivity, 150Vp-p max input, 1M ohm impedance
- 4 digit .3" red LED display
- Less than 0.5% distortion in 200Hz and 200KHz ranges less than 0.15% in 20Hz and 2KHz ranges
- Ranges: 20Hz-200Hz, 200Hz-2KHz, 2KHz-20KHz and 20KHz-200KHz
- 10K Ω impedance, 10V rms maximum input
- 8.5"L x 10"W x 3.25"H

DOS-600 8 lbs\$189.95

OSCILLOSCOPE PROBE

Pen-sized probe is finely-balanced and well insulated.

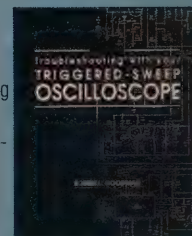


- Three settings: 1X, REF, 10X
- Grounding clip and 4-foot cord
- Includes a micro-hook tip for safe in-circuit testing

OS-PROBE 1 lb\$19.95

TAB BOOKS TROUBLESHOOTING WITH YOUR TRIGGERED-SWEEP OSCILLOSCOPE

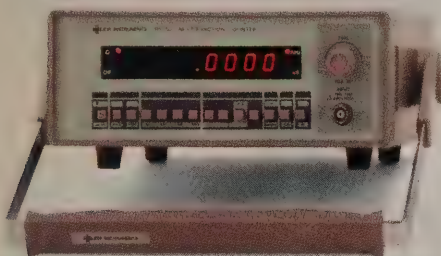
With this valuable guide, electronics technicians, engineers and hobbyists can save hours of troubleshooting time and get the most out of their triggered-sweep oscilloscope. It describes new troubleshooting techniques for rapid, surefire waveform analysis. Also included are spectrum analysis, test applications, storage, multiple-trace displays, triggering, waveform analysis, improvements on older features applications and uses.



TAB38911 2 lbs 320 pages, 1992\$18.95

100MHZ MULTIFUNCTION COUNTER

Our economically-priced multifunction counter offers you precise, lab quality results. It quickly and easily provides frequency, period and totalize measurements for a wide range of useful applications.



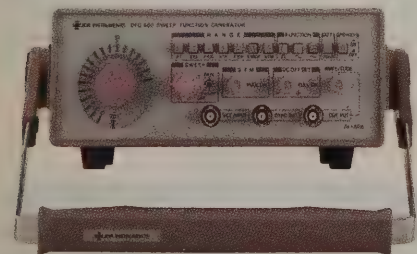
- Short Term Accuracy: $\pm 3 \times 10^{-9}$ for 1 second, $\pm 2 \times 10^{-5}$ for 1 second
- Time Base: 10MHz
- 8 digit .3" red LED display with decimal point
- Gate, overflow, KHz, MHz, and uS indicators
- 10Hz to 10MHz direct, 10MHz to 100MHz prescaled by 10
- 1M Ω impedance, < 35pF
- Max voltage: 250V
- 8.5"L x 10"W x 3.25"H

DFC-100 8 lbs\$179.95

DFC-1000 8 lbs\$199.95
1 GHz multifunction counter

DIGITAL FUNCTION GENERATOR

This sweep function generator produces signals in seven ranges with low distortion. Each tuning range provides 1000:1 frequency control, making it ideal for most general-purpose applications.

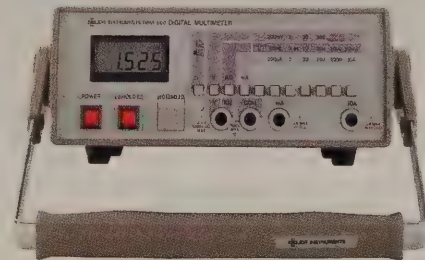


- Range: 0.02Hz to 2MHz in 7 ranges, 0 to ± 12 VDC
- Triangle, sine, square root, TTL square root, pulse, ramp and skewed sine wave output
- Distortion: Triangle wave: <1% for 0.2Hz to 100KHz
Sine wave: <2% for 10Hz to 100KHz
- 0.5Hz to 50Hz linear sweep rate and 10:1 to 1000:1 sweep width
- 100:1 frequency control per range
- 8.5"L x 10"W x 3.25"H

DFG-600 8 lbs\$189.95

BENCH DMM WITH 4.5 DIGIT ACCURACY!

This extremely accurate bench-type multimeter has a continuity annunciator that sounds whenever a short is detected.

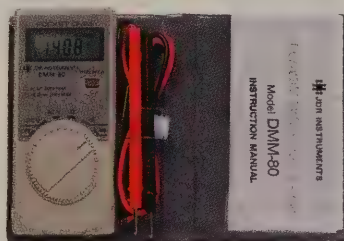


- 4-1/2 digit LCD display with 1/2" characters
- 29 ranges: DC voltage: 10 μ V-1000V
AC voltage: 10 μ V-750V
Resistance: 0.01 Ω - 20M Ω
AC/DC current: 10 μ A-10A
- Basic DC accuracy $\pm 0.05\%$
- Diode and continuity tester
- 2.5 times per second sample rate
- 8.5"L x 10"W x 3.25"H

DBM-500 8 lbs\$199.95

POCKET DMM

This powerful, pocket-sized DMM (just 4.25" x 2" x .33") goes where you go! The custom designed 80-pin LSI chip reduces component count and insures stability and long-term accuracy. Easy-to-read LCD display indicators for functions, unit, polarity, decimal point and low battery.



- 3-1/2 digit LCD display with 1/2" characters
- 16 ranges; basic DC accuracy: $\pm 1.0\%$
- Diode tester, autoranging, data hold feature, and low-battery indicator
- Measures: DC voltage: .1mV - 500V
AC voltage: 1mV - 500V
Resistance: .1 Ω - 20M Ω
- Includes test leads and vinyl case
- 2"L x .33"W x 4.25"H

DMM-80 1 lb\$29.95

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3.5 DIGIT DMM MULTITESTER

This full function 3.5 digit DMM offers you highly accurate performance and a host of features like audible continuity, capacitance, transistor, temperature and conductance measurements to help you do the job fast!



- 3-1/2 digit LCD display with 1/2" characters
- Basic DC accuracy $\pm 0.25\%$
- Low battery indicator, diode & continuity tester
- 34 ranges: DC voltage: 0.1mV - 1000V
AC voltage: 0.1mV - 750V
Resistance: 0.1 Ω - 20M Ω
Capacitance: 1pF - 20 μ F
Temperature: 0° - 2000°F
Conductance: 0.1ns - 200ns
Transistor hFE gain: 0 - 100
AC/DC current: 0.1 μ A - 10A
- Test leads, temperature probe and 9V battery included
- Measures 7.5"L x 3.5"W x 1.75"H

DMM-300 2 lbs\$79.95

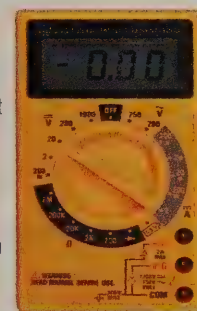
DMM-300-RP 1 lb\$3.95
Replacement set of test leads

DMM-300-TP 1 lb\$3.95
Replacement temperature probe

DMM-300-CC 1 lb\$9.95
Carrying case

3.5 DIGIT POCKET-SIZE DMM

Convenient pocket size doesn't compromise features or accuracy! Large, easy-to-read 1/2" LCD display. Includes probes and battery.



- 3-1/2 digit LCD display with 1/2" characters
- Basic DC accuracy $\pm 0.5\%$
- 19 ranges: DC voltage: 0.1mV - 1000V
AC voltage: 0.1mV - 750V
Resistance: 0.1 Ω - 2M Ω
DC current: 0.1 μ A - 2A
- Low battery indicator, diode and continuity tester
- Test leads and 9V battery included
- Measures 5"L x 1"W x 3"H; weighs under 7 ozs

DMM-150 2 lbs\$29.95

DMM-150-RP 1 lb\$3.95
Replacement set of test leads

DMM-150-CC 1 lb\$9.95
Carrying case

HOW TO ORDER

ORDER 5 WAYS!

You can order from JDR 5 ways! Choose the method that is most convenient for you--via phone, mail, fax, BBS or CompuServe!

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Place your order 24 hours a day, toll-free! Just call 800-538-5000 from anywhere in the continental U.S. Local and International customers, call 408-559-1200 Monday-Friday, 7 a.m. to 5 p.m. and Saturday, 9 a.m. to 3 p.m. (Pacific time).

For fastest phone ordering, fill out the order form ahead of time, and keep this catalog handy. Repeat customers can save time by providing their JDR Customer Number.

Corporate and Dealer orders are welcome. Be sure to ask for our Wholesale Department for volume pricing.

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Complete the order form and mail it to us with your payment. We accept personal checks, money orders, Visa, Mastercard and Discover Card. Credit card orders should include the expiration date.

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Call JDR's 9600 baud BBS for 24 hours a day on-line ordering. You'll also get up to the minute new product information and over 1 gigabyte of public domain software. Simply dial 408-559-0253.

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SHIPPING

AIR



For Federal Express Airborne or UPS 2nd Day Air, allow 2 days for delivery. Add \$7.50 for the first pound, and approximately \$2.00 for each additional pound.

OVERNIGHT



Available for orders received at JDR by 2 p.m. (Pacific). Please contact our Sales Department for specific rates.

GROUND



For UPS Ground, allow up to 8 days for delivery. Add \$5.00 for the first pound, plus approximately \$1.00 for each additional pound.

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We'll ship your order via UPS, Air Parcel Post, DHL, Freight Forwarder or U.S. Surface Mail. For shipping rates, please call our International Sales Department at 408-559-1200.

PAYMENT

CREDIT CARD



We welcome VISA, MasterCard and the Discover Card, with no added surcharges. We will not bill your credit card until your order has been shipped.

CHECK OR MONEY ORDER

You may also pay by check or money order in U.S. funds (drawn on a U.S. bank). New customers please allow 2 days for processing.

30 DAY TERMS

Please call our Accounting Department for more information.

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No minimum order. We are not responsible for typographical errors. We reserve the right to change prices and specifications without notice. Your JDR salesperson can confirm the latest price when you order. We reserve the right to limit quantities and to substitute manufacturer. All merchandise subject to prior sale. Items pictured may only be representative. A complete copy of our Terms and Conditions of Sale is available upon request.

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JDR AND THE ENVIRONMENT

JDR participates in many programs to help preserve our environment. We realize the world's resources are finite and precious, so we've instituted measures to help us all. Last year, we planted 3 times as many trees as our catalog consumed. These trees will help restore part of the devastated Yellowstone Park forest.

Our peanut packaging material is CFC-free, to help protect the ozone layer. In addition, we reduce undeliverable mail by processing our files through the US Postal Services National Change of Address (NCOA) system. We also use the Direct Marketing Association's Mail Preference file to reduce unwanted mailings.

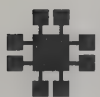
Internally, we recycle paper, aluminum cans, cardboard, packing material and more. Please consider recycling your packing material. We would gladly accept any cartons and/or packing materials that you send back to us and see that it gets properly recycled. Your local Mail Boxes Etc store also has a program to collect recyclable materials.

CATALOG OUTLET

All the items in this catalog (and more!) are available at our retail store in San Jose, California, at 1238 S. Bascom Avenue. Stop by when you're in the neighborhood!

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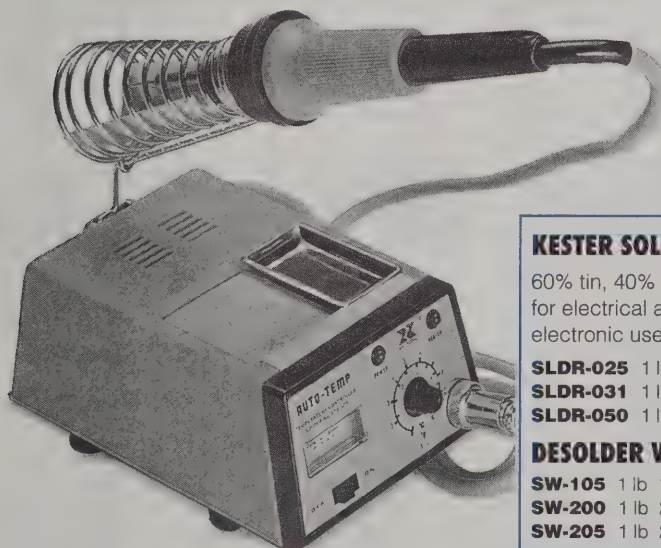
OUR BEST-SELLING SOLDER STATION! **\$79⁹⁵**

Our versatile soldering station has a ceramic handle for better thermal insulation, precise temperature controls and accurate heat sensing. The precise temperature regulation reduces the possibility of traces lifting, making it ideal for printed circuit board applications.

- 60 watts
- Adjustable temperature range: 200° to 900°F

- Power-on and heater-on temperature LEDs, Fahrenheit and Celsius gauge
- Includes solder iron, solder rest and cooling trap plus replaceable standard tip
- 4"W x 5.25"H x 6.5"D

168-3C 4 lbs **\$79.95**



KESTER SOLDER

60% tin, 40% lead
for electrical and
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SLDR-025 1 lb .0025" diameter **\$9.95**

SLDR-031 1 lb .0031" diameter **\$9.95**

SLDR-050 1 lb .0050" diameter **\$9.95**

DESOLDER WICK

SW-105 1 lb 1.5mm **\$9.99**

SW-200 1 lb 2.0mm **\$9.99**

SW-205 1 lb 2.5mm **\$9.99**

PORTABLE ELECTRIC DESOLDERING PUMP

This one-handed desoldering pump has a self-contained vacuum pump and heating element!

- 115VAC
- 10-1/4" long
- .059" nozzle



DSLD-115 2 lbs **\$29.95**

DSLD-T1 1 lb .059" Replacement tip **\$4.95**

DSLD-T2 1 lb .047" Replacement tip **\$4.95**

CONDUCTIVE PEN

This pen lets you draw conductive traces on most surfaces--and dries in minutes! Link components, repair defective traces, make smooth jumpers. Can be soldered at low temperatures. Holds 100-ft. of material; self-cleaning tip.



PEN-2200 1 lb **\$9.95**

PEN-3300 1 lb **\$9.95**

Conformal Coating Pen

EPOXY-2400 1 lb **\$14.95**

Conductive epoxy

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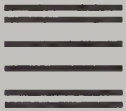
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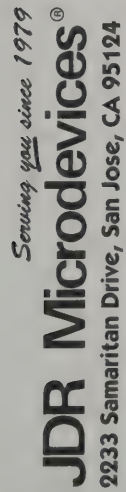
☐ Check (must be imprinted) ☐ C.O.D. (add \$5.00; see page 25)
☐ Net 30 (Prior approval required. Contact our Accounting Department)
☐ Master Card ☐ Visa ☐ Discover Card
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Authorized Signature _____
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State	Zip		
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Thank you for your order!

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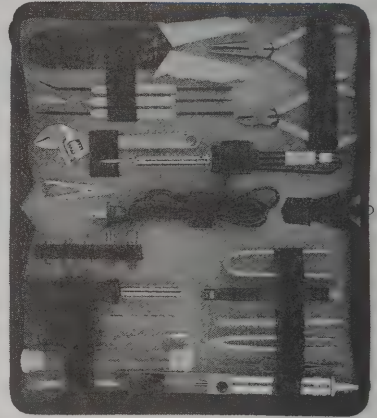
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25-PC. COMPUTER TOOL KIT **\$39⁹⁵**

Here are the tools most frequently needed to repair computers, printed circuit boards, peripherals and other electronic equipment.

- 30 watt solder iron and a desolder pump
- 3 soldering aid tools and 1 reel of solder
- Heat sink to protect parts
- 4-1/2" diag. cutter & 8" wire cutter/stripper
- 5" needle nose pliers and a 6" crescent wrench
- 14 to 16-pin IC inserter, an IC extractor and a 3-claw part extractor
- Both regular and reverse-action tweezers
- 1/8" flat screwdriver and 3/16" and 1/4" screwdriver tips; #0 Phillips screwdriver and #1 and #2 Phillips tips
- 3/16" and 1/4" nutdriver tips



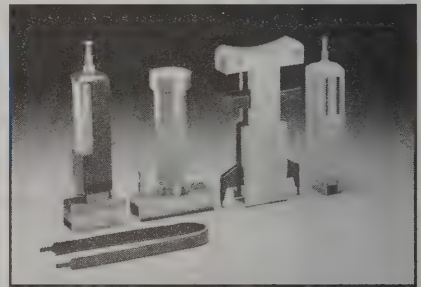
- Spare parts tube

TK-COM 3 lbs **\$39.95**

IC INSERTION/ EXTRACTION KIT **\$59⁹⁵**

This kit has all the tools you'll need for the safe insertion and extraction of CMOS DIP ICs from 8-40 pin sizes; extractors for 14-16 pin devices and 24-40 pin chips; inserters for 14-16, 24-28 & 36-40 pin ICs.

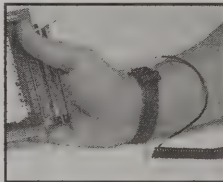
WK-7 1 lb **\$59.95**



WRIST STRAP

Protects ICs and other electronic devices against static discharge. Adjustable strap has removable grounding cord.

- Dissipates body-generated static
- Adjustable elastic wristband
- 5-foot coiled ground cord with alligator clip for quick disconnect

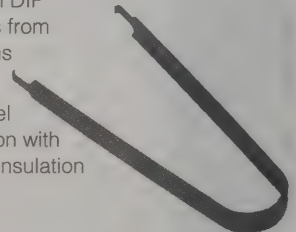


WRIST-STRAP 1 lb **\$6.95**

IC EXTRACTOR

The IC-EXT extractor is ideally suited for the hobbyist and lab engineer alike!

- Extracts all DIP IC devices from 8 to 28-pins
- One-piece spring steel construction with poly-vinyl insulation

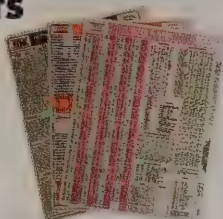


IC-EXT 1 lb **\$1.49**

CHARTS AND REFERENCE BOOKS

QUICK-REFERENCE MICROCHARTS

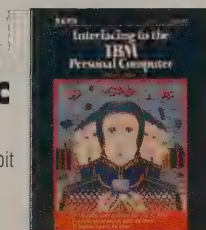
Get your information fast using these handy quick-reference guides! These double-sided, coated-plastic guides are designed to fit in standard binders.



Part #	Description	Sh. wt.	Price
MC-BIBM	IBM BASIC Language	1 lb	\$5.95
MC-CL	C Language	1 lb	\$5.95
MC-COMP	Active Components	1 lb	\$5.95
MC-IBAS	Fast Intro to BASIC	1 lb	\$5.95
MC-POST	Postscript Language	1 lb	\$5.95
MC-SHEL	Bourne Shell	1 lb	\$5.95
MC-STAT	Statistics	1 lb	\$5.95
MC-Z80	Z80 Microprocessors	1 lb	\$5.95
MC-6502	6502 Microprocessors	1 lb	\$5.95
MC-68K	68000 Microprocessors	1 lb	\$5.95
MC-7400	7400 TTL Devices	1 lb	\$5.95
MC-8048	8048 Microprocessors	1 lb	\$5.95
MC-8085	8085 Microprocessors	1 lb	\$5.95
MC-8086	8086 Microprocessors	1 lb	\$5.95

SAMS' INTERFACING TO THE IBM PC

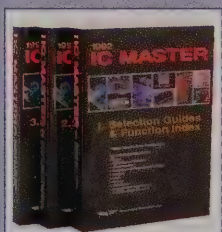
This friendly, comprehensive guide includes details on 8/16-bit ISA and PS/2 bus structures. It describes the technical issues regarding MCA, display adaptors, diskettes, printers, hard disks, CD-ROM and other types of interfaces.



SAMS-INTERFACE 2 lbs\$21.95

IC MASTER 3-VOLUME SET

This 3-volume set includes thousands of integrated circuits and other semiconductors from hundreds of manufacturers. It's ideal for cross-referencing manufacturers and alternate-source devices. Includes specifications and application notes, part number index and alternate source guide.



IC-MASTER 10 lbs\$129.95
 IC-MASTER-CD 2 lbs\$399.95
 IC Master on compact disk; includes spec sheet

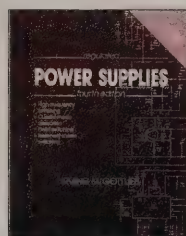
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TAB BOOKS

REGULATED POWER SUPPLIES

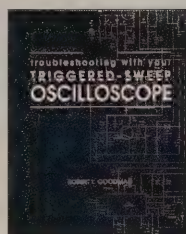
Now in its 4th edition, this classic reference has been updated and expanded to include the latest information on all types of regulated power supplies. Geared for those involved in regulated power supply design, testing and implementation, this volume explains regulation techniques, static and dynamic characteristics. It also describes the components used in both "older" types of switching power supplies and the newer state-of-the-art regulated supplies. Includes details of the actual circuitry and operation of solid-state regulators, numerous circuits designed to fit most any application, linear and switching type circuits and over 300 illustrations.



TAB25399 2 lbs 472 pages, 1992\$24.95

TROUBLESHOOTING WITH YOUR TRIGGERED-SWEEP OSCILLOSCOPE

Use this volume to save hours of troubleshooting time and get the most out of your triggered-sweep oscilloscope. It describes in detail the latest triggered-sweep oscilloscopes and new troubleshooting techniques for rapid, sure-fire waveform analysis. Also includes exhaustive illustrations, specifications of modern scopes, new features, spectrum analysis, test applications, storage, multiple-trace displays, triggering, waveform analysis, improvements on older features and applications and uses.



TAB38911 2 lbs 320 pages, 1992\$18.95

POCKETBOOK PC REFERENCE

This handy, concise book contains a tremendous amount of information you'll need in designing and configuring PC computer systems. Although small in size (it fits in a shirt pocket), you'll find a large number of tables, including interrupts, port assignments, DOS, hard drive types, special character codes, keyboard scan codes and more.



PC-REF 1 lb 357 pages, 1992\$14.95

TAB BOOKS

THE RADIO AMATEUR'S DIGITAL COMMUNICATIONS HANDBOOK (THE POCKET RADIO HANDBOOK)

Digital communications, a powerful combination of conventional radio communications and fast, efficient microcomputer control, is the fastest growing area in amateur radio. This handbook details the history, capabilities, and applications! It covers all of the major digital modes used in operating situations: CW, Baudot RTTY, ASCII RTTY, AMTOR, Packet, SSTV, and FAX, as well as operating information on HF, VHF, UHF, and Satellite. You'll learn how to set up an operational digital communications station, and are given descriptions of the latest equipment and accessories. Includes seven helpful appendices—with everything from code charts to operating frequencies.



TAB33626 1 lb 224 pages, 1992\$14.95

ENCYCLOPEDIA OF ELECTRONIC CIRCUITS

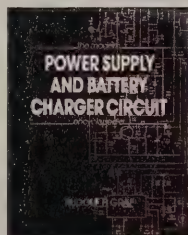
The Encyclopedia of Electronic Circuits Vol. 4 presents approximately 1,000 circuits used in computers, controls instrumentation, telecommunication, and many other fields of electronics. More than 100 alphabetically arranged categories cover circuits for everything from amplifiers to wireless microphones. Brief explanations of how each circuit works are given next to each schematic, with the original sources for the circuits listed in the back of the book. It also features an extensive index to all of the circuits in the book, as well as for the circuits found in each of the previous 3 volumes. This makes it easy for you to find the exact circuit needed and provides several entries for you to choose from!



TAB38954 3 lbs 752 pages, 1992\$29.95

POWER SUPPLY AND BATTERY CHARGER CIRCUIT ENCYCLOPEDIA

Here's the largest number of up-to-date power supply and battery charger circuit designs available in a single, low cost volume! It provides fast, easy access to more than 250 ready-to-use circuit designs representing state-of-the-art circuit technology. You'll find a selection of modern circuits covering the entire range of power supplies, including fixed, high voltage, variable, power supply monitors, and power supply protection circuits. Includes circuit designs for battery chargers that can be used with batteries of different voltages and chemistries.



TAB39233 1 lb 144 pages, 1992\$10.95

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MOTOROLA DATA BOOKS

RF DEVICE DATA 2 VOLUME SET

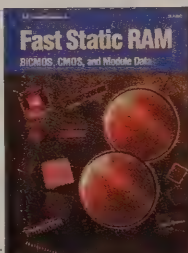
Provides data sheet information on Motorola's extensive range of RF products. Volume 1 has over 1400 pages of data on discrete transistors, plus a comprehensive Selector Guide listing the devices under a variety of application, frequency band and package classifications. Volume 2 includes RF amplifier modules and diodes, a Selector Guide and 396 pages of Application Notes. Case dimensions and a competitor cross reference are included.



MOT110 5 lbs 2209 pages, 1991\$16.95

FAST STATIC RAMs

This book has chapters on BiCMOS static RAMs, CMOS static RAMs, application specific static RAMs and fast static RAM modules. Application notes, a Selector Guide and a Cross Reference Guide are also included.



MOT156 3 lbs 648 pages, 1992\$9.95

OPTOELECTRONICS DEVICE DATA

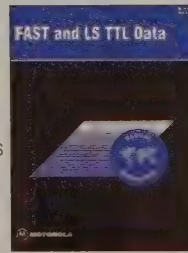
This data book contains information on Motorola's complete optoelectronics product line, including infrared GaAs and GaAlAs emitters, silicon detectors, high-technology optocouplers/isolators and fiber optics. Includes a general introduction and quality/reliability data, a selector guide and industry cross reference. Data sheets are grouped in sections covering Discrete Emitters/Detectors, Fiber Optic Components, Optoisolators/Optocouplers, Slotted Optical Switches and Opto Chips. Includes 82 pages of application notes.



MOT118 1 lb 147 pages, 1989\$6.95

FAST AND LS TTL DATA

Low Power Schottky (LSTTL) has become the industry standard logic, replacing the original 7400 TTL with lower power and higher operating speeds. Complete specifications for Motorola's standard LS TTL Schottky circuits and FAST™ families (74F) are provided here in data sheet form.



MOT121 2 lbs 716 pages, 1992\$8.95

MECL DEVICE DATA

Presents full technical data for Motorola's monolithic Emitter Coupled Logic families, including MECL 10KH, MECL10K and MECL III, plus MECL memories and Phase-Locked Loop products (MC4024, MC4044, etc.). MECL offers very high speeds, with propagation delays down to 10ns, for computer systems, high performance ATE and process control systems, signal processors and navigation systems. The families also offer other advantages which combine to reduce package count and simplify system design. Includes a technical introduction to MECL and a detailed discussion of system design considerations.



MOT122 2 lbs 534 pages, 1992\$7.95

HIGH SPEED CMOS LOGIC DATA

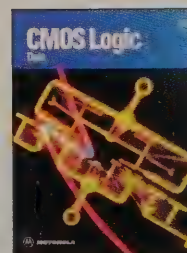
Motorola's HSCMOS family offers low power consumption, wide power supply range and high noise immunity, without sacrificing speed! This HSCMOS Data Book includes a Selector Guide by function, a discussion of design and handling considerations, and complete electrical and performance data sheets for the 74HC/74HCT families.



MOT129 2 lbs 642 pages, 1989\$9.95

CMOS LOGIC DATA

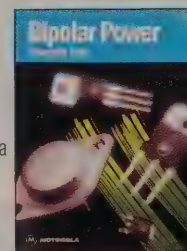
Presents technical data for Motorola's broad line of Metal-Gate CMOS Logic ICs. Data sheets provide complete specifications; a Product Selector Guide and a Handling and Design Guidelines chapter offer further information. Data covers all the MC14000 series logic circuits.



MOT131 2 lbs 563 pages, 1991\$8.95

BIPOLAR POWER TRANSISTOR DATA

Motorola produces more than 1100 off-the-shelf power transistors covering a wide range of applications. Their electrical, thermal and mechanical characteristics are presented here in data sheets, with a competitor Cross Reference and a Selector Guide showing devices by package, product category and major application.



MOT111 3 lbs 1140 pages, 1992\$12.95

POWER MOSFET TRANSISTOR DATA

Power MOSFETs offer characteristics and capabilities not available with bipolar power transistors. They have switching speeds, simpler gate drive requirements, reduced need for snubber circuits and low ON-voltages. This book provides a comprehensive Selector Guide by package, and complete data sheets on all Motorola's TMOS™ Power MOSFETs. It contains more than 200 pages of theory and applications information including Gate Drive Requirements, Paralleling and Characterization, plus a number of designs.



MOT135 1 lb 276 pages, 1992\$11.95

TELECOMMUNICATIONS DEVICE DATA

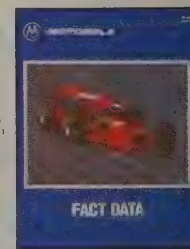
Motorola is a major supplier of semiconductors to telecommunications equipment manufacturers worldwide. This book includes nearly 700 pages of data sheets on Integrated Voice/Data, Switching, Basic Phone, Cordless Phone, Filter, Data Communication, Transmission, Modem and RF Modem Circuits. A Selection Guide is included to simplify the task of choosing appropriate devices for a system. Applications information, handling and design guidelines, and quality and reliability overviews provide additional support for users of these circuits.



MOT136 2 lbs 909 pages, 1989\$12.95

FACT DATA

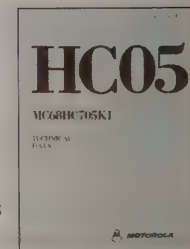
Fact™ (74AC/74ACT) uses a sub 2 micron silicon gate CMOS process to attain speeds similar to Advanced Low Power Schottky, while retaining the ultra low power and high noise immunity of CMOS logic. It also offers superior line driving characteristics and excellent ESD and latchup immunity. This book describes Motorola's product line with device specifications and a Selector Guide, plus over 30 pages of design considerations and comparisons with previous technologies.



MOT138 1 lb 409 pages, 1990\$6.95

MC68HC705K1 TECHNICAL DATA

There are 13 sections from the General Description to Mechanical Specifications that explain in detail everything you need to know about the MC68HC705K1. Also included is a List of Figures and a List of Tables



MOT68HC705K1D 1 lb 106 pages, 1992\$5.95

MOTOROLA DATA BOOKS

MECL SYSTEM DESIGN HANDBOOK

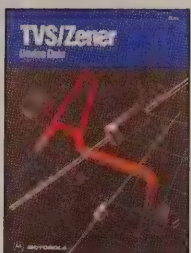
Engineers look at ECL families such as MECL III, MECL 10K, and MECL 10KH to meet demands for higher performance systems. Designing with MECL is not difficult, but an understanding of transmission line driving, complementary outputs, wired-OR, short propagation delays and high toggle rates is essential for optimum design. This book provides complete information on MECL operation.



MOT205 1 lb 234 pages, 1988 \$ 8.95

TRANSIENT VOLTAGE SUPPRESSORS/ZENER DIODES

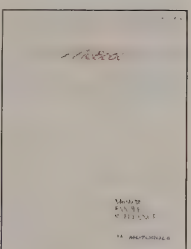
Transient Voltage Suppressors and Zener Device Data presents technical data for Motorola Transient Voltage Suppressors and Zener Diodes. Includes data sheets and a comprehensive Selector Guide and Industry Cross-Reference Guide. For the first time, this data book includes theory and applications information in addition to the actual product specific data. The user-friendly format includes sections on the 3 major categories of Zener Diodes: Regulation, Temperature Compensation, and Transient Voltage Protection.



MOT150 1 lb 449 pages, 1992 \$6.95

M68000 FAMILY REFERENCE

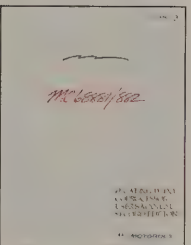
Assembles the Technical Summaries of the M68000 family devices into 1 reference book. Includes M68000 MPUs up to the MC68030. Following a Selector Guide, products are grouped under 6 section headings: Processors, Coprocessors, DMA Controllers, Data Communication Devices, Network Devices and General Purpose Peripherals. Includes mechanical data on the packages, plus notes on Motorola's technical support.



MOT68000FR 3 lbs 656 pages, 1992 \$12.95

MC68881/MC68882 MATH-CO USER'S MANUAL

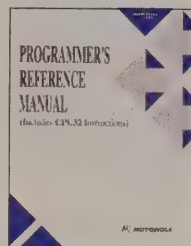
The MC68881 and MC68882 are intended to be used as coprocessors to the MC68020 and MC68030 MPUs. This 2-part manual gives a detailed description of the programmer's model and each instruction, and also describes the hardware interface to the main processor, with bus cycle timing and register addressing information.



MOT68881UM 2 lbs 395 pages, 1992 \$14.95

MC68000 FAMILY PROGRAMMER'S REFERENCE MANUAL

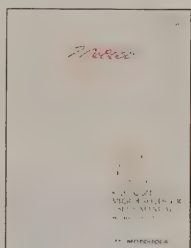
Contains detailed information, in an instruction-per-page format, on each of the instructions used by the MPUs and coprocessors in the M68000 family. Includes MPUs from the MC68000 to the MC68040, the MC68851 PMMU, the MC68881 and MC68882 Floating-Point Coprocessors, and the CPU32 processor core used in the M68300 family. The manual is divided into Interger Instructions, Floating Point Instructions, Supervisor (privileged) Instructions, and CPU32 Instructions and Addressing modes. A Format Summary lists all the instructions in binary format, and a processor/instruction cross reference is included.



MOT68000PM 2 lbs 652 pages, 1992 \$11.95

MC68000 8-/16-/32-BIT MICROPROCESSORS USER'S MANUAL

Provides hardware details and programming information for the MC68000, MC68008, MC68010 and MC68HC000 microprocessors. The manual fully describes their electrical and operating characteristics, noting any differences. Includes a summary of the instruction set. Refer to MC68000 Programmer's Reference Manual for complete details on instruction set.



MOT68000UM 1 lb 228 pages, 1992 \$5.95

MC68020 32-BIT MICROPROCESSOR USER'S MANUAL

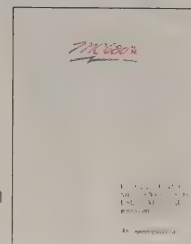
The MC68020 was the first full 32 bit implementation of Motorola's MC68000 family. This User's Manual describes its capabilities, operation and programming; it is intended for systems designers, systems and applications programmers. Sections include Data Organization and Addressing, Instruction Set Summary, Processing States, Signal Description, On-Chip Cache, Bus Operation, Exception Processing, Coprocessor Interface, Instruction Timing and Applications Information. Refer to MC68000 Programmer's Reference Manual for complete details on the instruction set.



MCT68020UM 2 lbs 378 pages, 1992 \$6.95

MC68030 ENHANCED 32-BIT MPU USER'S MANUAL

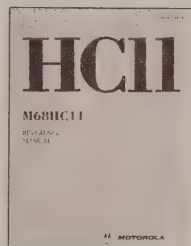
Motorola's MC68030, a 32-bit MPU, combines a CPU core, instruction and data caches, bus controller and memory management unit in one VLSI device. This manual covers it in 13 sections. Includes Data Organization and Addressing, Instruction Set Summary, Processing States, Signal Description, On-Chip Caches, Bus Operation, Exception Processing, Memory Management Unit, Co-processor Interface, Instruction Timing, Applications Information, Electrical Specifications and Mechanical Data. Refer to MC68000 Programmer's Reference Manual for instruction set details.



MOT68030UM 2 lbs 590 pages, 1992 \$14.95

MC68HC11 REFERENCE MANUAL

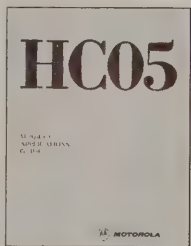
A valuable aid in the development of M68HC11 applications. Detailed descriptions of all internal subsystems have been developed and checked against Motorola internal design documentation. Practical applications demonstrate the operation of each subsystem; they are treated as complete systems, including hardware/software interactions and trade-offs. Discusses interfacing techniques to prevent component damage and efficient use of the instruction set.



MOT68HC11RM 2 lbs 486 pages, 1992 \$12.95

MC68HC05/MC68HC705C8 APPLICATIONS GUIDE

Assumes no knowledge of micro-controllers. Provides a basic but thorough introduction to micro-controllers, and covers the architecture, addressing modes, instruction set, communications and timer of the MC68HC705C8. Also traces the development of the hardware and software for a practical application (a home thermostat project) with circuit diagram and software listing. Appendix with M68HC05 instruction set details includes 50 review questions based on the guide.



MOT68HC05AG 1 lb 296 pages, 1992 \$9.95

TECH TIP

"Break the rules to find potential problems. When wiring a prototype design, I usually leave the decoupling caps off the board. If the design works well with no caps, think how much better it will be when you put them in!"
—D.M.

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INTEL DATA BOOKS

THE MCS®-8080/ 8085 FAMILY USER'S MANUAL

This manual gives detailed descriptions and technical information of the function, operation and interfacing of Intel's 8080 and 8085 microprocessors.



INT205775 1 lb 216 pages, 1986\$19.95

80286/80287 PROGRAMMER'S REFERENCE

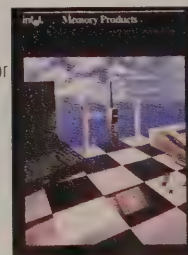
This manual is two books in one—the 80286 and 80287. Chapters on the 80286 are Introduction to the 80286, 80286 Base Architecture, Basic Instruction Set, Extended Instruction Set, Real Address Mode, Memory Management and Virtual Addressing, Protection, Tasks and State Transitions, Interrupts and Exceptions, System Control and Initialization and Advanced Topics. Appendixes, figures and tables are also included. Chapters on the 80287 are Overview of Numeric Processing, Programming Numeric Applications, System-Level Numeric Programming and Numeric Programming Examples. Appendixes, figures and tables are included.



INT210498 1 lb 478 pages, 1987\$21.95

MEMORY PRODUCTS

Most of this handbook is devoted to techniques and information to aid in the design of semiconductor memory into an application or system. Informative data sheets on Flash Memories, EPROMs, DRAMs, and SRAMs contain many comprehensive charts, block diagrams, operating characteristics, and programming modes. Application notes provide diagrams and hardware design information.



INT210830 2 lbs 1057 pages, 1992\$19.95

MICROPROCESSORS VOLUMES 1 AND 2

This handbook contains extensive information on Intel's X86 microprocessor family, including the Intel486™ microprocessor, numeric coprocessors, cache and memory controllers, and floppy and hard disk controllers. The data sheets and application notes offer comprehensive charts, diagrams, instructions, and hardware information for leading-edge 32-bit system development.



INT230843 4 lbs 2328 pages, 1992\$24.95

386™ DX MPU PROGRAMMER'S REFERENCE MANUAL

This manual is divided into four parts: Application Programming, System Programming, Compatibility and Instruction Set. Each part contains extensive information to enable programmers to understand everything they need to know about the 386™ DX microprocessor.



INT230985 2 lbs 478 pages, 1992\$25.95

CONNECTIVITY

This handbook has product data sheets and design and applications information for Intel's entire line of connectivity products, including Intel's first 32-bit LAN coprocessor, the 82596, twisted pair Ethernet products, and modem chips for desktop and laptop PCs. Technical information on Intel's connectivity boards is also provided. Applications articles explore Intel's entire line of connectivity products, and charts are included to show parameters and test conditions, layout principles and much more.



INT231658 3 lbs 1616 pages, 1993\$26.95

386™ SX MPU HARDWARE REFERENCE MANUAL

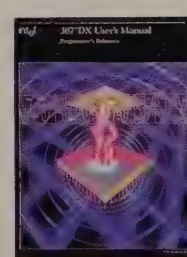
This hardware reference manual is divided into 10 chapters that discuss the 386™ SX microprocessor. They consist of: System Overview, Internal Architecture, Coprocessor Hardware Interface, Memory Interfacing, Cache Subsystem, I/O Interfacing, Physical Design and Debugging and Test capabilities.



INT240332 1 lb 195 pages, 1990\$25.95

387™ DX USER'S MANUAL AND PROGRAMMER'S REFERENCE

This manual describes the 387 Numeric Processor Extension for the 386DX microprocessor. Understanding the 387DX requires an understanding of the 386DX; therefore, a brief overview of 386DX concepts is presented first. Materials are presented from the perspective of software designers, both at an applications and at a systems software level.



INT231917 1 lb 304 pages, 1990\$19.95

386™ SX MPU PROGRAMMER'S REFERENCE MANUAL

This reference manual contains information on the Intel386 SX microprocessor's features, including the 32-bit integer processor, interface to the Intel387™ SX numerics coprocessor, segmentation, paging, instruction back-up, pipelining and debugging registers. The book presents the Intel386 architecture in four parts: Application Programming, System Programming, Compatibility and Instruction Set. This manual contains detailed information for application programmers on when to use and how to access and utilize Intel386 SX operation modes.



INT240331 2 lbs 560 pages, 1991\$25.95

8086/8088 USER'S MANUAL AND PROGRAMMER'S HARDWARE REFERENCE

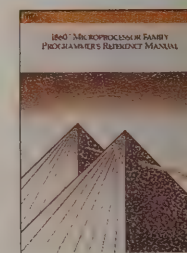
This two section manual includes, "Programming", an overview of the 8086/8088 family of CPUs with some general design information and a programming design description of the 8087. Section Two, "Hardware", is a reference source with specific hardware design information on the operation and functions of the 8086/8088 family of CPUs and the 8087.



INT240487 2 lbs 575 pages, 1989\$23.95

860™ MICRO FAMILY PROGRAMMER'S REFERENCE MANUAL

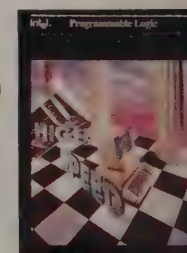
This new reference manual on Intel's latest supercomputing microprocessors has complete information on the i860 XP processor. Covers architecture relevant to programmers and software engineers, including data types, registers, addressing modes, on-chip caches, instructions and more.



INT240875 1 lb 184 pages, 1992\$19.95

PROGRAMMABLE LOGIC

Contains data sheets, application notes and technical briefs for Intel's Programmable Logic device family, including the PC-based tool, iPLDs II, used to design, compile and program Intel's PLDs.



INT296083 2 lbs 686 pages, 1992\$19.95

INTEL DATA BOOKS

486™ MPU HARDWARE REFERENCE MANUAL

This manual describes the basic mechanisms of the hardware interface to the 486™ processor and gives design examples of systems using the processor. Chapters include: Introduction to the Processor, Internal Architecture, Processor Bus, Performance Considerations, Memory Subsystem Design, Cache Subsystem, Peripheral Subsystem, System Design, MULTIBUS II System Interface and Physical design and System Debugging. Appendix A, "Introduction to Intel 86 Family Architecture" compares hardware characteristics of the 8086, 80286, 386™ and 486™ processors and describes how the hardware architecture of the Intel 86 family of processors has evolved. Appendix B, "PLD Codes and Schematics" contains schematics and PLD codes for the 486™ DRAM design.



INT240552 1 lb 455 pages, 1990 \$27.95

486™ MPU FAMILY PROGRAMMERS' REFERENCE MANUAL

The high integration Intel 486™ microprocessor maintains binary compatibility with previous members of the X86 architectural family, but also possesses many enhancements. Among these are new instructions to speed up the manipulation of memory-based semaphores and on-chip hardware that ensures cache consistency and provides hooks for multi-level caching. The most recent member of the family, the Intel 486™ DX2, incorporates new speed doubler technology that enables the chip to operate twice as fast as surrounding components. This manual is organized in five parts, including Application Programming, System Programming, Numeric Processing, Compatibility, and the Instruction Set. Appendices provide data on the opcode map, flags, condition codes, instruction formats and timing, and code optimization.



INT240486 3 lbs 928 pages, 1992 \$27.95

386™ DX MPU HARDWARE REFERENCE MANUAL

This hardware reference manual is divided into ten chapters that discuss the 386™ SX microprocessor. They consist of: System Overview, Internal Architecture, Local Bus Interface, Performance Considerations, Coprocessor Hardware Interface, Memory Interfacing, Cache Subsystem, I/O Interfacing, Physical Design and Debugging and Test Capabilities.



INT231732 1 lb 288 pages, 1992 \$21.95

MULTIMEDIA AND SUPERCOMPUTING PROCESSORS

Covers Intel's problem-solving embedded applications products, including the i750® video processor and the i860 and i960 microprocessor families.



INT272084 2 lbs 1280 pages, 1992 \$21.95

PERIPHERAL COMPONENT HANDBOOK

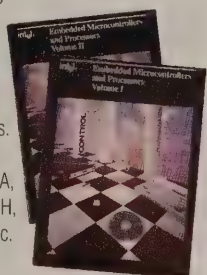
Contains comprehensive charts covering symbols and functions, block programs, and operational and functional descriptions of Intel peripheral components. Includes information for developing leading-edge 32-bit systems. Popular products covered include the 8237, 8253, 8255, 8256, 8259, 8272, 8279, 8741, 8742, etc.



INT296467 3 lbs 1751 pages, 1992 \$24.95

EMBEDDED CONTROLLERS AND PROCESSORS, VOLUME 1 AND 2

Intel has combined product specifications and data sheets for world-standard 8-bit MCS-51 and 16-bit MCS-85 and -186 family controller architectures into two comprehensive volumes. Products covered are the 8031, 8032, 8051, 8052, 8080A, 8085A, 8155, 8224, 8243, 8748H, 8749H, 8751H, 8755A, 80186, 80188 etc. Includes CMOS versions.



INT270645 5 lbs 2963 pages, 1992 \$24.95



Got troubles in your life? Solve them quickly with a microcontroller. While I admit this only works for a certain type of problem, it can be just the ticket for many complex tasks.

Once you have used any microcontroller, you will quickly find other applications where your previous experience can pay off again and again.

Intel's "Embedded Applications" handbook is ideal for selecting the right micro for the job at hand. Inside are example circuits and programs for many of life's little problems.

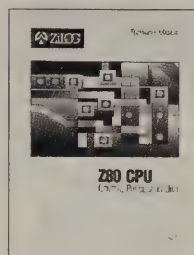
Just a quick scan of the topics reveals micros in applications from printer controller, graphic processor, software serial port, DC motor controller to Analog/Digital processing and FFT algorithms.

—Derick Moore, Director of Engineering

ZILOG DATA BOOKS

Z80 CPU TECHNICAL MANUAL (ALL CLOCK SPEEDS)

Included in this manual is an introduction, the architecture pin description, timing, instruction set, instruction description, interrupt response, hardware implementation examples and software implementation examples of the Z80 CPU.



ZIL29 1 lb 338 pages, 1992 \$6.95

MPUs AND PERIPHERALS

Includes product specifications for the Discrete Z80® Family, Embedded Controllers and Serial Communications Controllers. Plus, technical articles, Z80® development support, a Super-integration™ Products Guide, Support Products Summary, Z80/Z180®/Z280® hardware/software support and more.



ZIL2610 3 lbs 1324 pages, 1992 \$9.95

MPUs AND PERIPHERALS APPLICATION NOTES

Microprocessor and Peripherals Application Notes contained in this book are the application notes on the products mentioned above along with a section of questions and answers and additional information on Datacom Products.



ZIL2622 2 lbs 374 pages, 1992 \$9.95

MICRO-CONTROLLERS

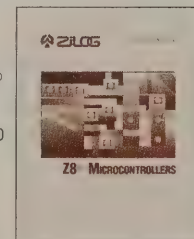
Covers the Z8® family, product specifications on CMOS, NMOS and peripheral products. Also included are application notes and technical articles.



ZIL8275 4 lbs \$9.95
1364 pages, 1991

Z8® MICROCONTROLLERS TECHNICAL MANUAL

This manual has very helpful Z8® Family Reference Charts, a section on the Z8671 Single Chip BASIC Interpreter, a Z8® ASM Assembler Users Guide, application notes and support products.



ZIL8291 2 lbs 696 pages, 1991 \$9.95

NATIONAL DATA BOOKS

OPERATIONAL AMPLIFIERS

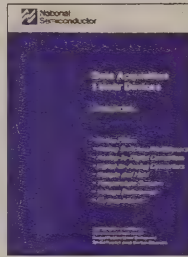
Sections contained in this book are Operational Amplifiers (LM741, LF347, LF411 etc.), Buffers, Voltage Comparators, Instrumentation Amplifiers, Surface Mount and Appendices/Physical Dimensions.



400061 3 lbs 1277 pages, 1993\$19.95

DATA ACQUISITION LINEAR DEVICES

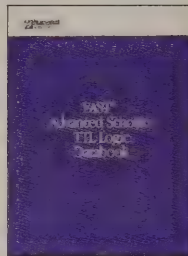
This book has sections on Active Filters, Analog Switches/Multiplexers, Analog-to-Digital Converters, Digital-to-Analog Converters, Sample-and-Hold, Temperature Sensors and Voltage Reference.



400033 3 lbs 961 pages, 1992\$15.95

FAST ADVANCED SCHOTTKY TTL LOGIC

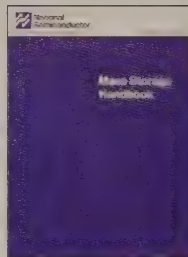
Design considerations, technical information, and data sheets are contained in this book on National's line of 54F/74F products.



400023 2 lbs 740 pages, 1990\$15.95

MASS STORAGE HANDBOOK

Sections contained in this book are Rigid-Disk Pulse Detectors, Rigid-Disk Data Separators/Synchronizers and ENDECs, Rigid-Disk Data Controller, SCSI Bus Interface Circuits, Floppy-Disk Controller, Rigid-Disk Preamplifiers, Servo-Control Circuits, Disk-Drive Microcontroller Circuits, and a Disk-Interface Design Guide.



400068 2 lbs 705 pages, 1989\$11.95

IBM DATA COMMUNICATIONS HANDBOOK

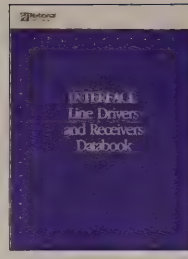
This book contains technical information and data sheets on IBM Data Communications devices such as the DP8340 IBM 3270 Protocol Transmitter/Encoder, DP8341 IBM 3270 Protocol Receiver/Decoder, etc. Also included are application notes.



400029 1 lb 424 pages, 1992\$12.95

INTERFACE: LINE DRIVERS AND RECEIVERS

Contained in this book are sections on General Purpose Line Drivers, General Purpose Receivers, TIA/EIA-232 (RS-232), TIA/EIA-422 and 423, TIA/EIA-485 and application notes.



400032 2 lbs 557 pages, 1992\$11.95

CMOS LOGIC

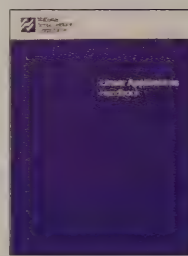
This book contains technical information and application notes on National's 54HC/74HC, 54HCT/74HCT, 54C/74C, and CD4000 series.



400039 3 lbs\$19.95
1453 pages, 1988

LINEAR APPLICATIONS HANDBOOK

This handbook provides a fully indexed and cross-referenced collection of linear integrated circuit applications using monolithic and hybrid circuits from National Semiconductor. The organization of this handbook takes advantage of this innate coherence by keeping each application note intact, arranging them in numerical order, and providing a detailed subject index.



400041 3 lbs 1248 pages, 1991\$26.95

DISCRETE SEMICONDUCTOR PRODUCTS

This book has sections on Diodes, Bipolar NPN Transistors, Bipolar PNP Transistors, JFET Transistors, Surface Mount Products, Pro-Electron series, Consumer Series, Power Components, Process Characteristics and Packaging. Also included are very helpful Cross References, Selection Guides and data sheets.



400047 2 lbs 737 pages, 1989\$15.95

POWER ICs

This book has sections on Linear Voltage Regulators (LM323, LM320 series, LM340 series etc.), Low Dropout Voltage Reg., Switching Voltage Reg., Motion Control, Peripheral Drivers (75451, 75452 etc.), High Current Switches and Surface Mount.



400062 2 lbs 790 pages, 1993\$14.95

MEMORY

This book contains technical information and data sheets on National's CMOS EEPROMs, CMOS EPROMs, processor oriented EPROMs, 5V low current EPROMs, low voltage EPROMs, application specific EEPROM and PROMs. Application notes are also provided.



400069 1 lb 504 pages, 1992\$17.95

PROGRAMMABLE LOGIC DEVICES AND DESIGN GUIDE

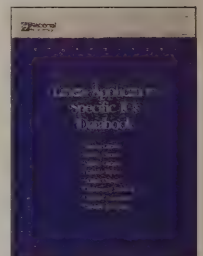
Included in this book are sections on Designing with PLDs, PLD Design Methodology, PLD Design Development Tools, Fabrication of Programmable Logic and a Product Line Overview. Also included are data sheets and application examples.



400081 1 lb 442 pages, 1992\$14.95

LINEAR APPLICATION SPECIFIC ICs

The sections contained in this book are Audio, Radio, Video, display drivers, clock drivers, frequency synthesis, automotive and special functions. Some examples of circuits covered include LM380, LM555, LM565, LM567, LM1877, LM1881, LM3909, LM3914, etc.



400060 3 lbs 1007 pages, 1993\$15.95

TELECOMMUNICATIONS

This book includes the latest offerings for both analog and digital loop technologies. Sections covered are COMBO® CODEC/Filter and SLIC devices, ISDN and other digital loop devices and analog telephone components. There are also several Application Notes and a handy Selection Guide. For the reader's convenience, the book has been organized so that applications information immediately follows the supported devices.



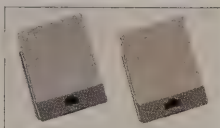
400120 2 lbs 432 pages, 1992\$12.95

CATALOG OUTLET
1238 S. BASCOM AVE. SAN JOSE, CA
(408) 559-7724 M-F 9-7, SAT 9-5, SUN 12-4

MODULAR PHONE CONNECTORS

STANDARD SURFACE-MOUNT JACK BOXES

Jack boxes with screw terminals, for telephone or network applications.



PH-JBS-6 RJ11 6P6C	\$1.49
PH-JBS-8 RJ45 8P8C	\$1.95
PH-JBS-6D DEC 6P6CD	\$2.49

FLUSH MOUNT WALL JACKS

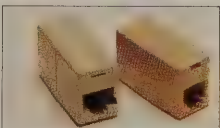
For telephone or network applications, in home or office.



PH-WJ-S 6P6C Single	\$1.49
PH-WJ-D 6P6C Double	\$1.95

MODULAR IN-LINE COUPLERS

Back-to-back modular jacks to connect two modular cables.



PH-2F-6 RJ11 6P6C	\$.99
PH-2F-8 RJ45 8P8C	\$1.95

MODULAR T-ADAPTOR

Provides 2 jacks from 1 outlet. RJ45 type accepts keyed plugs.



PH-2TF-6 RJ11 6P6C	\$2.95
PH-2TF-8 RJ45 8P8C	\$5.95

COILED REPLACEMENT HANDSET CORD

Choose 12 or 25-foot lengths. 4P4C. Color: beige.



PH-3642 12-foot length	\$1.95
PH-3643 25-foot length	\$3.95

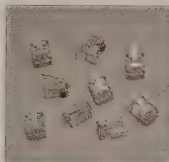
TECH TIP

"When crimping your own male-to-male modular flat cable for telephone use, be sure to crimp the cable with a crossover. Telephone systems are designed for this configuration. On the other hand, many line printer extenders, such as our CXPT-4 and CXP-2, do not use the crossover. Be sure to crimp your cables based on the connected equipment, or your equipment may not function properly."

-R.B.

MODULAR PLUGS

These modular plugs crimp easily onto modular flat cable (sold below).



Part #	Type	10 pcs	25 pcs
PH-6P4C-xx	RJ11	1.49	2.95
PH-6P6C-xx	RJ11	1.69	3.39
PH-8P8C-xx	RJ45	2.99	5.95
PH-8P8CK-xx	RJ45w/key	3.19	6.39
PH-6P6CD-xx	DEC	4.99	9.95

To order, replace xx in part no. with quantity (10 or 25 pcs)

MODULAR FLAT CABLE

Use with modular plugs and standard modular plug crimp tools.

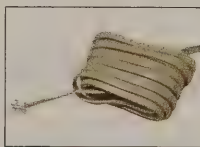


Part #	Type	50'	100'	1000'
PH-4CBL-xxxx	4 wire	1.95	2.95	28.95
PH-6CBL-xxxx	6 wire	4.95	8.95	39.95
PH-8CBL-xxxx	8 wire	5.95	11.95	59.95

To order, replace xxxx in part number w/length (50, 100, or 1000 foot)

MODULAR CORDS

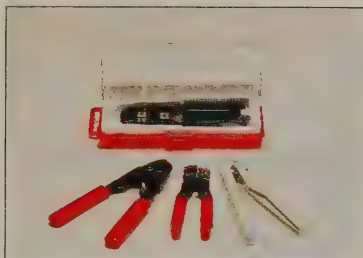
For phones, modems or networks. Standard modular plugs at each end. In 7, 14 or 25 foot lengths.



Part #	Type	7'	14'	25'
PH-4C-xx	RJ11	1.49	2.49	2.95
PH-6C-xx	RJ11	1.69	2.89	3.49
PH-8C-xx	RJ45	2.19	3.49	4.95
PH-8CK-xx	RJ45 w/key	2.39	3.79	5.49

Replace xx in part no. with length (7, 14 or 25 foot)

MODULAR PLUG CRIMP TOOLS KIT



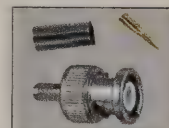
Sturdy, high quality modular crimp tools for the serious installer. Available alone or in a kit with modular connectors.

PH-1005-6C 1 lb	\$14.95
RJ11 6P6C metal crimp tool	
PH-1005-8C 1 lb	\$14.95
RJ45 8P8C metal crimp tool	
PH-384 1 lb	\$3.95
RJ11 6P4C plastic crimp tool for occasional jobs	
HT-2037 1 lb	\$18.95
RJ11 6P6C metal crimp tool with 50 modular plugs	
HT-210A 1 lb	\$16.95
RJ45 8P8C metal crimp tool with 10 modular plugs	

NETWORK COAX CONNECTORS

BNC MALE CRIMP

3-pc. male crimp type connector for RG-58 cable.



BNC-M 1 lb	\$1.29
BNC-M59 1 lb	\$1.29

For RG-59 cable

BNC MALE TWIST-ON

1-pc. male twist-on type connector for RG-58 cable.



BNC-MT 1 lb	\$1.95
BNC-MT59 1 lb	\$1.95

For RG-59 cable

BNC T ADAPTOR

Double female to single male.



BNC-T2F 1 lb	\$3.99
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BNC T ADAPTOR

Three BNC female.



BNC-T3F 1 lb	\$3.99
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CHASSIS CONNECTOR

BNC female chassis connector.



BNC-F 1 lb	\$1.69
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BNC COUPLER

Double female adaptor.



BNC-2F 1 lb	\$1.99
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BNC-2F-1 1 lb	\$1.99
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Threaded Coupler

TERMINATORS

BNC-TERM-50 1 lb	\$1.99
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50Ω Line terminator

BNC-TERM-75 1 lb	\$1.99
------------------------	--------

75Ω Line terminator



NETWORK CABLES

Shielded Twinax cables for IBM System 3x and AS/400 systems.



Twinax

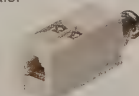
Coax

Part #	Type	Length	Weight	Price
RG58-6	Coax	6 feet	1 lb	5.95
RG58-12	Coax	12 feet	2 lbs	8.95
RG58-25	Coax	25 feet	2 lbs	12.95
RG58-50	Coax	50 feet	2 lbs	18.95
RG58-100	Coax	100 feet	3 lbs	24.95
TWINAX-6	Twinax	6 feet	1 lb	12.95
TWINAX-12	Twinax	12 feet	1 lb	18.95
TWINAX-25	Twinax	25 feet	2 lbs	29.95
TWINAX-50	Twinax	50 feet	4 lbs	44.95
TWINAX-100	Twinax	100 feet	7 lbs	59.95

NETWORK BALUNS

Converts BNC coaxial cable to twisted-pair wires with either a modular RJ11 jack or 2 screw terminals.

- BNC male-RJ11 (6P2C)
- Screw terminal posts

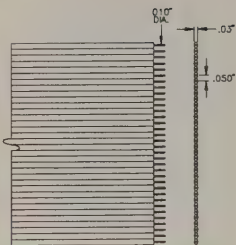


BAL-COAX 1 lb Coax balun	\$9.95
BAL-TWNX 1 lb Twinax balun	\$14.95

CONNECTORS

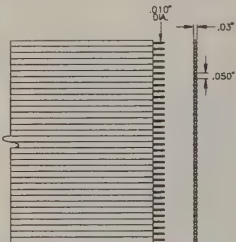
CABLES

RIBBON CABLE



Part #	AWG	# Conductors	1-99'	100' spool
RC10	28	10	.15/ft	.10/ft
RC16	28	16	.24/ft	.16/ft
RC20	28	20	.30/ft	.20/ft
RC25	28	25	.38/ft	.25/ft
RC26	28	26	.39/ft	.26/ft
RC34	28	34	.51/ft	.34/ft
RC40	28	40	.60/ft	.40/ft
RC50	28	50	.75/ft	.50/ft

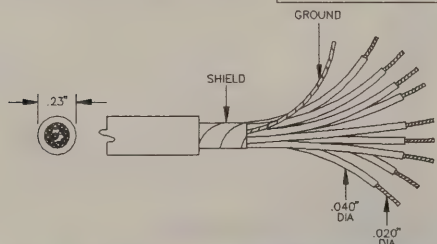
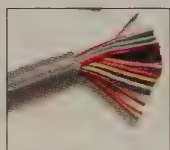
RAINBOW RIBBON CABLE



Part #	AWG	# Conductors	1-99'	100' spool
RCC10	28	10	.30/ft	.20/ft
RCC16	28	16	.48/ft	.32/ft
RCC20	28	20	.60/ft	.40/ft
RCC25	28	25	.75/ft	.50/ft
RCC26	28	26	.78/ft	.52/ft
RCC34	28	34	1.07/ft	.68/ft
RCC40	28	40	1.20/ft	.80/ft
RCC50	28	50	1.50/ft	1.00/ft

ROUND CABLE

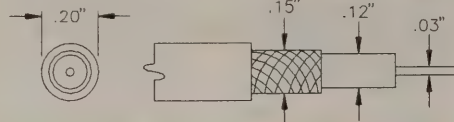
Color coded. Choose 9 or 25-conductor.



Part #	1-99'	100-999'	1000' spool
CABLE-9S	.49/ft	.35/ft	.25/ft
CABLE-25S	.79/ft	.59/ft	.49/ft

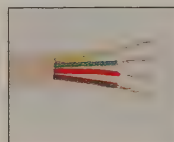
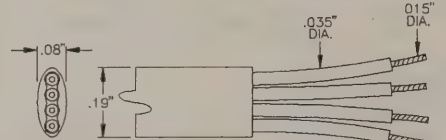
**CALL FOR
Volume Discounts**

COAXIAL/ TWINAX CABLE



Part #	Type	1-99'	100-999'	1000' spool
RG-58/U	50Ω Ethernet	.19/ft	.12/ft	.10/ft
RG-59/U	75Ω CATV	.20/ft	.14/ft	.12/ft
RG-62/U	75Ω Arcnet	.22/ft	.16/ft	.14/ft
TW NX-CBL	100Ω Twinaxial	.49/ft	.45/ft	.42/ft

MODULAR FLAT CABLE

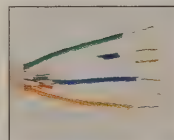
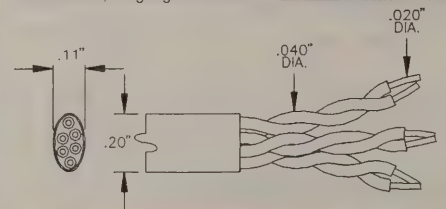


Part #	Type	50' spool	100' spool	1000' spool
PH-4CBL-xxxx	4 wire	1.95	2.95	28.95
PH-6CBL-xxxx	6 wire	4.95	8.95	39.95
PH-8CBL-xxxx	8 wire	5.95	11.95	59.95

Note: To order, replace xxxx in part number with desired length (50, 100 or 1000 ft.)

TELEPHONE STATION WIRE

6-Conductor, 26 gauge solid wire.



Part #	1-999'	1000' spool
CBL-ST6	.10/ft	.07/foot

HOOK-UP WIRE

STRANDED:

Part #	Type	1-999'	1000'+
WIRE-24xSR	24 Gauge	.05/ft	.025/ft
WIRE-22xSR	22 Gauge	.05/ft	.031/ft
WIRE-20xSR	20 Gauge	.07/ft	.040/ft
WIRE-18xSR	18 Gauge	.08/ft	.045/ft

SOLID:

Part #	Type	1-999'	1000'+
WIRE-24xSL	24 Gauge	.05/ft	.045/ft

To order: Specify yellow(Y), red(R), blue(B), or black(K) insulation by replacing the "x" in the part # with Y, R, B, or K.

ALLIGATOR CLIPS



Design your own custom test leads! Small, medium and large are fully insulated. To order, specify black (B), green (G), red (R), white (W) or yellow (Y) in place of "x" in part number.

SAC-x	Sh. wt. 1 lb Small\$.12
MAC-x	Sh. wt. 1 lb Medium\$.18
LAC-x*	Sh. wt. 1 lb Large\$.25
HAC-x*	Sh. wt. 1 lb Heavy-duty\$.25

*Available in black or red only

ALLIGATOR LEAD SET

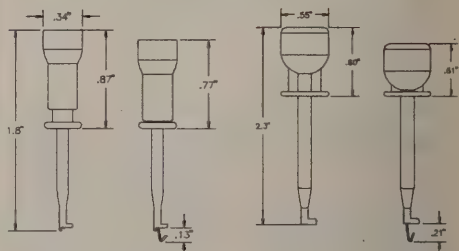


- Ten 16 gauge wire leads: 16" long
- Each lead has two insulated alligator clips connected by an insulated wire

137-05	1 lb\$2.49
--------	------	-------------

MICRO-HOOKS

- Spring loaded hook easily clips onto IC leads tightly
- Removable base allows direct wiring onto conductive hook



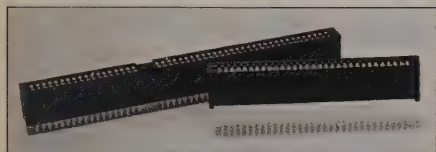
MH-1.5R	1 lb Red 1.5"\$.99
MH-1.5B	1 lb Black 1.5"\$.99
MH-2R	1 lb Red 2"\$.99
MH-2B	1 lb Black 2"\$.99

TECH TIP

"Color coded leads are ideal for extending existing cables or crimping custom cables. Available in 4, 6 and 8 conductor versions."

-DM

EDGE CARD CONNECTORS

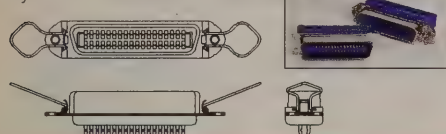


Part #	# Pins	Spacing	Type	Price
100P-ST	100	.125"	S-100	6.95
100P-WW	100	.125"	S-100	7.95
98P-ST	98	.100"	16-bit PC Bus	6.95
72P-ST	72	.100"	General Purpose	6.95
72P-WW	72	.100"	General Purpose	7.95
62P-ST	62	.100"	8-bit PC Bus	3.95
62P-WW	62	.100"	8-bit PC Bus	4.95
50P-ST	50	.100"	Apple Bus	3.95
50P-WW	50	.100"	Apple Bus	4.95
44P-ST	44	.156"	General Purpose	3.95
44P-WW	44	.156"	General Purpose	4.95

ST = Solder Tail WW = Wire-Wrap

CENTRONICS CONNECTORS

For use with parallel printer and SCSI cables. Available in solder-cup, ribbon cable crimp and right-angle PC mount styles.



Part #	Description	Price
IDCEN36	36-pin Ribbon cable - Male	3.95
IDCEN36/F	36-pin Ribbon cable - Female	4.95
CEN36	36-pin Solder cup - Male	1.85
CEN36/F	36-pin Solder cup - Female	2.85
CEN36PC	36-pin Right angle PC - Female	2.85
CEN50	50-pin Solder cup - Male	2.95



Derick's HIGH-TECH CORNER

CUTTING CORNERS OR CRUSHING CREATIVITY

A nearly universal complaint of technical people these days is the control placed on them by management, and in particular by accounting management.

Along with JIT (Just in Time) inventory management for production came the edict that the whole company could benefit from better management of inventory.

Absolutely Right--And Dead Wrong! Some departments are stifled by too much control in the wrong places. One example is the control of small parts for prototyping or test/repair.

When technicians have to fill out requisitions and then wait for them to be filled so they can determine if a part is bad, minutes or hours are wasted trying to avoid the requisition hassle, and then more time is wasted following through on the procedure.

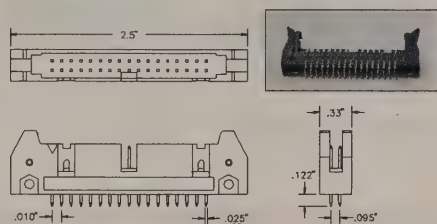
Every department should have a collection of commonly used parts readily available for use. Where appropriate, a sign out sheet should be used to restock the parts cabinet. These parts are usually costed out when they go into the cabinet because the value of the inventory is worth less than the cost of maintaining strict control.

—Derick Moore, Director of Engineering

HEADERS

SOLDER

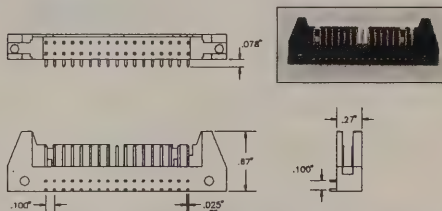
Solder directly into PC boards. Two rows of pins on 0.1" centers mate with IDS sockets on page 36.



Part #	# Pins	Size	Price
IDH10S	10	2 x 5	.89
IDH20S	20	2 x 10	1.29
IDH26S	26	2 x 13	1.69
IDH34S	34	2 x 17	2.20
IDH40S	40	2 x 20	2.49
IDH50S	50	2 x 25	2.79

RIGHT ANGLE SOLDER

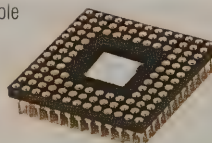
As above with right angle connector for low-profile circuit boards. Ideal for stacked board configurations.



Part #	# Pins	Size	Price
IDH10SR	10	2 x 5	.85
IDH20SR	20	2 x 10	1.35
IDH26SR	26	2 x 13	1.69
IDH34SR	34	2 x 17	2.29
IDH40SR	40	2 x 20	2.69
IDH50SR	50	2 x 25	3.39

PIN GRID ARRAY SOCKETS

These PGA sockets are available in soldertail or wire wrap styles and will accommodate standard pin grid devices such as the 68-pin 80286.



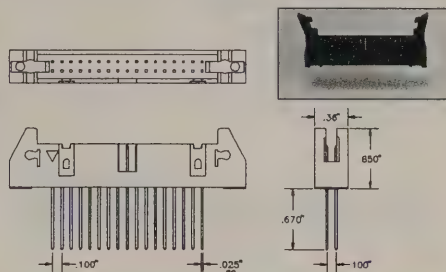
Part #	# Pins	Grid	Type	Price
PGA68	68	11 x 11	ST	2.99
PGA84	84	11 x 11	ST	3.99
PGA121	121	13 x 13	ST	5.49
PGA132	132	14 x 14	ST	5.99
PGA68-WW	68	11 x 11	WW	6.95
PGA84-WW	84	11 x 11	WW	7.95
PGA121-WW	121	13 x 13	WW	10.95
PGA132-WW	132	14 x 14	WW	12.95

ST = Solder Tail, WW = Wire-Wrap

CALL FOR
Volume Discounts

WIRE-WRAP

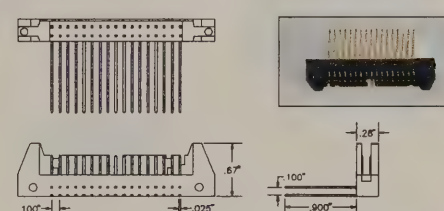
Two rows of pins on 0.1" centers with 3-level wire-wrap pins. For wire-wrapped boards and prototyping.



Part #	# Pins	Size	Price
IDH10W	10	2 x 5	1.49
IDH20W	20	2 x 10	2.19
IDH26W	26	2 x 13	2.69
IDH34W	34	2 x 17	3.59
IDH40W	40	2 x 20	3.99
IDH50W	50	2 x 25	4.95

RIGHT ANGLE WIRE-WRAP

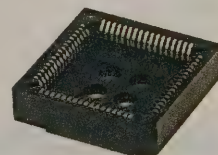
As above with right angle connector for low-profile circuit boards.



Part #	# Pins	Size	Price
IDH10WR	10	2 x 5	1.59
IDH20WR	20	2 x 10	2.29
IDH26WR	26	2 x 13	2.89
IDH34WR	34	2 x 17	3.79
IDH40WR	40	2 x 20	3.99
IDH50WR	50	2 x 25	5.19

PLCC SOCKETS

Mount these state-of-the-art plastic leaded chip carriers and take advantage of the latest advances in chip technology.



Part #	# Pins	Price
PLCC20	20	1.29
PLCC28	28	1.29
PLCC32	32	1.89
PLCC44	44	1.69
PLCC52	52	2.89
PLCC68	68	2.19
PLCC84	84	2.39

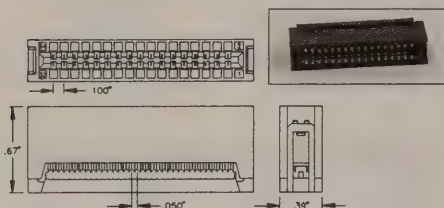
ORDER TOLL FREE
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IDC CONNECTORS

All our IDC connectors feature gold-plated contact pins and full insulation displacement.

IDE EDGE CARD CONNECTORS

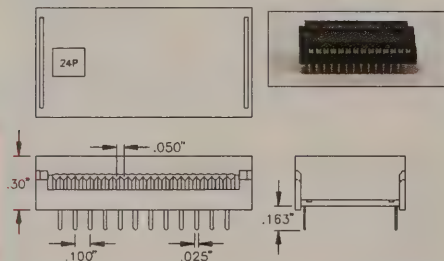
Create custom cables by crimping your cable to these connectors. Can also be used to add connectors to an existing cable.



Part #	Contacts	1-24	25+
IDE10	10	.55	.45
IDE20	20	.55	.45
IDE26	26	.75	.55
IDE34	34	.89	.69
IDE40	40	1.29	1.09
IDE50	50	1.39	1.29

DIP PLUGS

Crimp to your ribbon cable to extend a device's signals. Ideal for test applications. Fits in standard .3" end, .6" IC sockets.



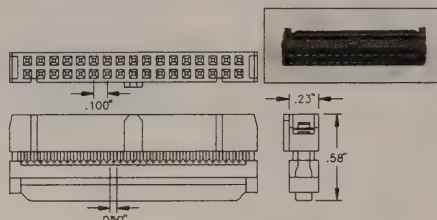
Part #	Contacts	1-24	25+
IDP08	8	.49	.39
IDP14	14	.55	.45
IDP16	16	.59	.49
IDP18	18	.69	.57
IDP20	20	.79	.67
IDP24	24	.85	.72
IDP28	28	.99	.85
IDP40	40	1.19	.99

"...As I hung up the phone I was really happy that somebody out there in today's world still takes a little time to make sure that the job is done right. You have a devoted customer now..."

—E.V.A.
Dixon, MO

IDS SOCKETS

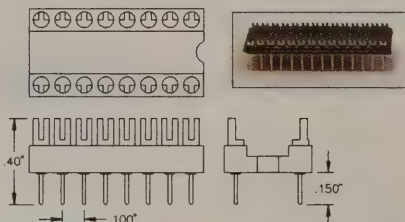
Our IDS sockets feature plated contact pins for reliable connections.



Part #	Contacts	1-24	25+
IDS10	10	.55	.35
IDS16	16	.60	.40
IDS20	20	.65	.45
IDS26	26	.75	.55
IDS34	34	.85	.65
IDS40	40	1.09	.99
IDS50	50	1.19	1.09

COMPONENT CARRIERS

Create hybrid modules by soldering components to a DIP carrier. Change a circuit's characteristics by simply plugging a new carrier in a DIP socket!



Part #	Contacts	1-24	25+
ICC08	8	.69	.59
ICC14	14	.79	.69
ICC16	16	.89	.79
ICC18	18	.99	.89
ICC20	20	.99	.89
ICC22	22	.99	.89
ICC24	24	1.49	1.29
ICC28	28	2.49	2.19
ICC40	40	2.95	2.49

D-SUB CRIMP PIN EXTRACTION TOOL

Makes D-SUB pin extraction easy. Available in two sizes, for standard or high-density pins.

EXT-027	1 lb Standard	\$4.95
EXT-022	1 lb High density	\$4.95

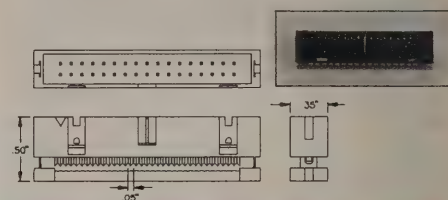
D-SUB CRIMP TOOL

Save time! This tool speeds up connector assembly and ensures good connections every time!

HT-213	2 lbs	\$9.95
--------	-------	--------

RIBBON CABLEHEADER CONNECTORS

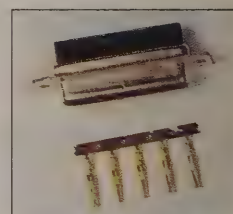
Ideal for creating ribbon cable extensions. Two rows of pins on 0.1" centers crimp to ribbon cable.



Part #	# Pins	Size	Price
IDM20	20	2 x 10	2.49
IDM26	26	2 x 13	2.79
IDM34	34	2 x 17	3.99
IDM40	40	2 x 20	4.69
IDM50	50	2 x 25	5.49

CRIMP STYLE D-SUB CONNECTORS

These easy-to-assemble connectors come in a variety of sizes. See center column below for extraction tool.



MALE

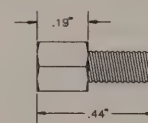
Part #	Contacts	Price
CP09P	9	.75
CP15P	15	.80
CP25P	25	.90
CP37P	37	1.10
HCP15P*	15	1.49
CPP (Pins)	100/8.00	

FEMALE

Part #	Contacts	Price
CP09S	9	.80
CP15S	15	.85
CP25S	25	.95
CP37S	37	1.20
HCP15S*	15	1.49
CPS (Pins)	100/10.00	

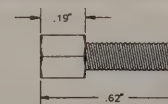
* Includes 15 pieces high-density crimp pins

D-SUB MOUNTING HARDWARE



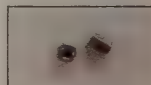
DB mounting nut with 1 female end and 1 male end.

DB-MHW	Pair	.59
--------	------	-----



DB mounting nut with 1 female and 1 long male end.

DB-MHW-031	Pair	.99
------------	------	-----

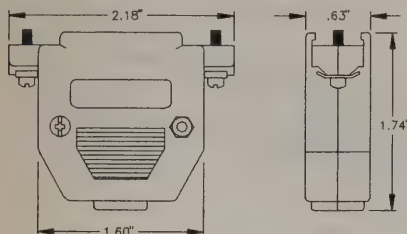


DB mounting nut with two female ends.

DB-MHW-027	Pair	.99
------------	------	-----

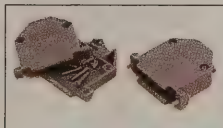
HOODS

Included strain-reliefs reinforce your connections and keep your connections reliable. Metal and metalized plastic cases provide shielding.



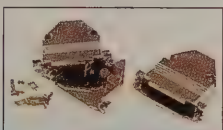
PLASTIC HOODS

Part #	# Pins	1-24	25+
HOOD09	9	.39	.29
HOOD15	15	.39	.29
HOOD25	25	.39	.29
HOOD37	37	.69	.59
HOOD50	50	.75	.65



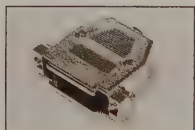
METAL HOODS

Part #	# Pins	1-24	25+
MHOOD09	9	1.55	1.45
MHOOD15	15	1.65	1.49
MHOOD25	25	1.75	1.55



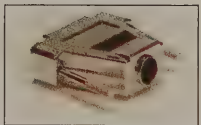
METALIZED PLASTIC HOODS

Part #	# Pins	1-24	25+
MPHOOD09	9	.49	.39
MPHOOD15	15	.49	.39
MPHOOD25	25	.59	.49
MPHOOD37	37	.79	.69



HOOD W/THUMBSCREWS

Metalized hood with thumbscrews provides easy hookup.



MPHOOD25-TS 1 lb\$99

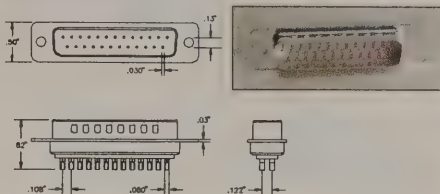
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(408) 559-7724 M-F 9-7, SAT 9-5, SUN 12-4

D-SUBMINIATURE CONNECTORS

SOLDER CUP

Solder cup D-SUB connectors for making cable assemblies using standard round cable. Use hoods sold at left.

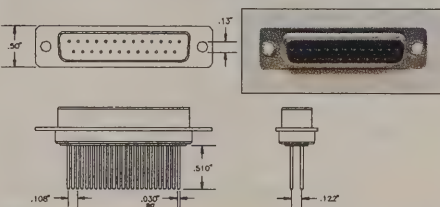


MALE				FEMALE			
Part #	# Pins	1-24	25+	Part #	# Pins	1-24	25+
DB09P	9	.45	.35	DB09S	9	.49	.39
DB15P	15	.55	.45	DB15S	15	.59	.49
HDB15P*	15	.79	.69	HDB15S*	15	.89	.75
DB19P	19	.69	.50	DB19S	19	.75	.55
DB25P	25	.65	.55	DB25S	25	.75	.55
DB37P	37	1.19	.95	DB37S	37	1.29	.99
DB50P	50	1.85	1.50	DB50S	50	2.29	1.80

* High Density

WIRE-WRAP

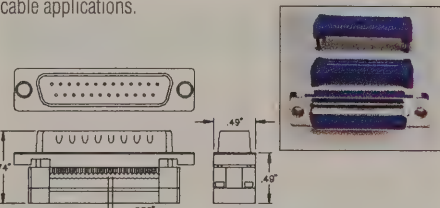
Wire-wrap pins for all your prototyping applications.



MALE				FEMALE			
Part #	# Pins	1-24	25+	Part #	# Pins	1-24	25+
DB09PWW	9	1.69	1.49	DB09SWW	9	2.76	2.35
DB25PWW	25	3.89	3.26	DB25SWW	25	6.84	5.99
DB37PWW	37	5.60	4.90	DB37SWW	37	8.49	7.99

IDC RIBBON CABLE

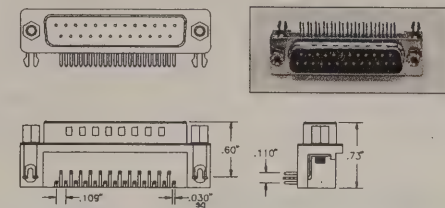
Insulation displacement type for all your standard flat cable applications.



MALE				FEMALE			
Part #	# Pins	1-24	25+	Part #	# Pins	1-24	25+
IDB09P	9	1.39	1.19	IDB09S	9	1.45	1.25
IDB15P	15	1.99	1.79	IDB15S	15	2.05	1.85
IDB25P	25	2.19	1.95	IDB25S	25	2.29	1.99
IDB37P	37	3.59	3.29	IDB37S	37	3.69	3.49

RIGHT ANGLE PC MOUNT (SHORT STYLE)

Approximately 0.6 inch from mounting hole to connector face. Solder type PC mount.

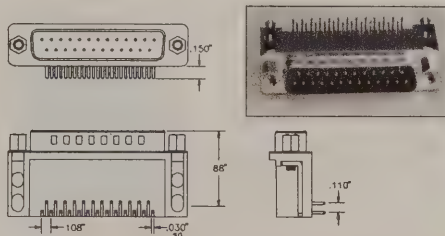


MALE				FEMALE			
Part #	# Pins	1-24	25+	Part #	# Pins	1-24	25+
DB09PRS	9	.60	.50	DB09SRS	9	.69	.57
DB15PRS	15	.85	.70	DB15SRS	15	.99	.79
DB25PRS	25	.90	.75	HDB15SRS*	15	1.25	1.05
DB37PRS	37	1.80	1.50	DB25SRS	25	1.05	.85
				DB37SRS	37	1.95	1.60

* High Density

RIGHT ANGLE PC MOUNT (LONG STYLE)

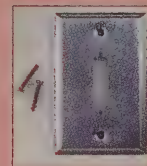
Approximately 0.9 inch from mounting hole to connector face. Solder type PC mount.



MALE				FEMALE			
Part #	# Pins	1-24	25+	Part #	# Pins	1-24	25+
DB09PR	9	.90	.70	DB09SR	9	.95	.75
DB15PR	15	1.20	.95	DB15SR	15	1.25	.99
DB25PR	25	1.40	1.15	DB25SR	25	1.50	1.25
DB37PR	37	2.27	1.75	DB37SR	37	2.49	1.85

WALL PLATES

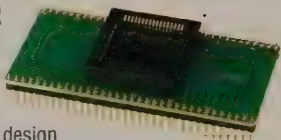
Stainless steel wall plates for permanent wiring of serial or parallel applications. 2 screws.



25-PIN D-SUB	
WP-DB1 1 lb.....	\$1.95
Single cutout.	
WP-DB2 1 lb.....	\$1.95
Double cutout	
9-PIN D-SUB	
WP-9DB1 1 lb.....	\$1.95
Single cutout	
WP-9DB2 1 lb.....	\$1.95
Double cutout	
BNC COAX	
WP-CX1 1 lb.....	\$1.95
Single cutout	
WP-CX2 1 lb.....	\$1.95
Double cutout	
TWINAX	
WP-TWXX1 1 lb.....	\$1.95
Single cutout	
WP-TWXX2 1 lb.....	\$1.95
Double cutout	

PLCC PROTOTYPE ADAPTER

PLCC socket is mounted on a circuit board for easy wire wrap or design prototyping. Solder masked PCB with .25" long leads.



PL-28 1 lb 28-pin PLCC	\$7.95
PL-44 1 lb 44-pin PLCC	\$9.95
PL-68 1 lb 68-pin PLCC	\$19.95
PL-84 1 lb 84-pin PLCC	\$24.95

PLCC EXTRACTOR

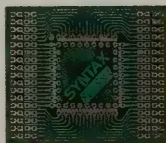
This spring-assisted chip extraction tool is specially designed for safely removing PLCC's from sockets without damaging the components. These hardened steel tongs, when inserted at the socket corners, lift the chip with a simple squeeze!



EXT-PLCC 1 lb	\$19.95
---------------------	---------

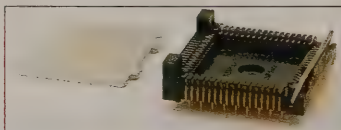
68-PIN PGA/PLCC BOARD

Great for use in your project or prototype development. Accepts a standard 68-pin PGA or PLCC socket. Solder masked with plated holes.



PC-681 1 lb	\$3.95
-------------------	--------

68-PIN LC SOCKET

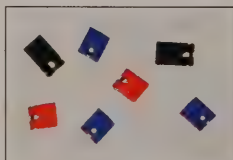
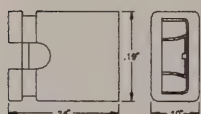


Mount leadless chips, such as the 80286, on your PC board.

LC-CARRIER 1 lb	\$7.95
-----------------------	--------

SHORTING BLOCKS

Fits standard 0.1" header pins insulated with gold-plated contacts.

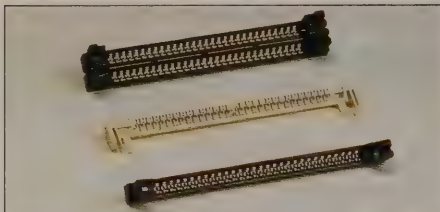


JUMPER-Black	\$20
JUMPER-BLUE Blue	\$25
JUMPER-RED Red	\$25

MEMORY MODULE SOCKETS

Use these sockets with SIMM and SIP modules used in high-density memory applications.

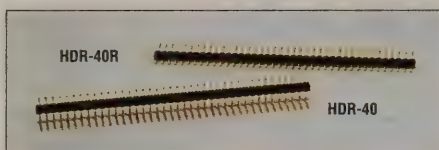
SIMM SOCKETS



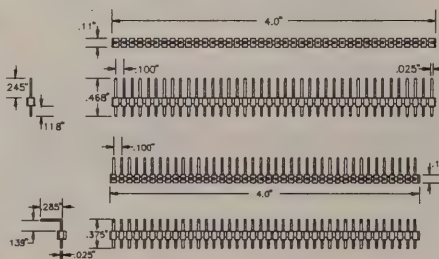
- 30-pin for single in-line memory modules.
- Plastic polarity pins
- Tin-plated for reliability
- Locking tabs for secure insertion

SIMM-SOCKET 1 lb	\$2.95
SIMM-SOCKET-2 1 lb Dual style	\$3.95
SIMM-SOCKET-A 1 lb Angled style	\$3.95

SNAPPABLE HEADER PINS



- Gold-plated pins
- 0.1" centers
- Choose straight or right angle leads

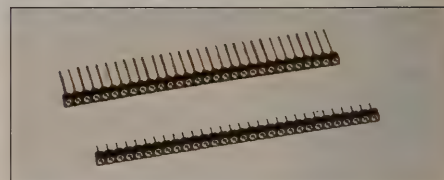


Part #	Description	Price
HDR-40	1 x 40 straight male	.99
HDR-40R	1 x 40 right angle leads	1.49
HDR-80	2 x 40 straight male	2.49
HDR-80R	2 x 40 right angle leads	2.99

"...During the period of time I've worked with your sales and technical support staffs, a comfort level has evolved to the point that whenever I need parts, JDR is the first (and usually the last) called... In closing JDR is truly appreciated."

—R.D.A.
Columbus, OH

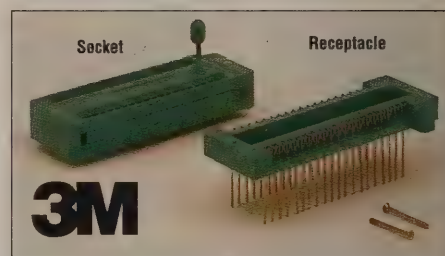
SIP SOCKETS



- 30-pin for standard single in-line Package Memory Modules
- Tin-plated for reliability

SIP-SOCKET 1 lb	\$1.95
SIP-SOCKET-WW 1 lb Wire-wrap	\$3.95

TEXTOL ZIF SOCKETS AND RECEPTACLES



Excellent for test or programming applications, these Zero Insertion Force sockets are ideal for multiple insertions/extractions. Both sockets and receptacles available in 14 to 40-pin configuration.

SOCKETS

Part #	Pins	1-24	25+
ZIF-14	14	7.95	6.95
ZIF-16	16	9.95	8.95
ZIF-20	20	10.95	9.95
ZIF-24	24	11.95	10.95
ZIF-28	28	12.95	11.95
ZIF-40	40	16.95	14.95

WIRE-WRAP RECEPTACLES

Part #	Pins	1-24	25+
ZIF-14R	14	11.95	9.95
ZIF-16R	16	11.95	9.95
ZIF-20R	20	12.95	10.85
ZIF-24R	24	12.95	10.85
ZIF-28R	28	14.95	12.50
ZIF-40R	40	19.95	18.30

TECH TIP

"Our component carriers, listed on page 36, allow you to create hybrid modules. Change a circuit's characteristics by simply plugging the new carrier in a DIP socket! For instance, you could configure a circuit to operate with a different stepper motor, sensor, etc."

—RB

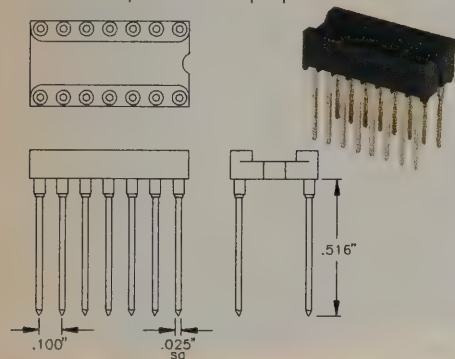


IC SOCKETS

These precision IC sockets offer excellent quality at competitive prices. They have been carefully evaluated by our Technical Lab to assure that they stand up to the rigors of design work.

WIRE-WRAP (2 LEVEL)

These are economical 2 level sockets, allowing fewer wire-wrap connections per pin.



Part #	Pins	Width	1-24	25+
14 PIN WW-2	14	.3"	.52	.45
16 PIN WW-2	16	.3"	.59	.52
20 PIN WW-2	20	.3"	.89	.82
24 PIN WW-2	24	.6"	.99	.89
28 PIN WW-2	28	.6"	1.39	1.29
40 PIN WW-2	40	.6"	1.49	1.29



Derick's HIGH-TECH CORNER

SOCKETS TO YA!

Experience is a great teacher, and one thing I have learned after building hundreds of prototypes is that I make more "careless" mistakes than errors in basic design. I doubt that I am alone in this observation.

Here is how I have personally applied some of that experience:

All of my prototypes are built using socketed parts so that debug is never slowed by questions about a part that cannot be easily removed. And, I prefer either point-to-point with solder-tail sockets for small jobs or wire-wrap sockets for larger projects.

If I have to wire wrap 4 pins in a net, I wire A-B, C-D, then B-C. Until you learn better, most people would wire A-B, B-C, C-D. While the electrical connection is the same, if you ever need to remove the A-B wire, you will have to remove the other two first.

ID-Wraps (sold on page 48) are more than a luxury. They will save you hours of debug time by insuring that you don't miswire an IC in the first place.

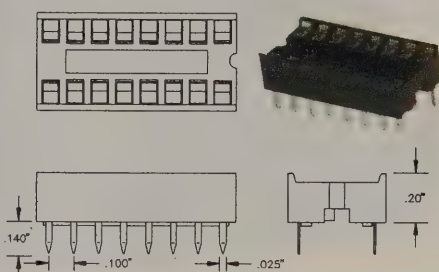
And one last helpful comment: If you are working with programmable parts that will be on and off the board many times, invest in a ZIF socket for those parts. When the proto is complete you can always remove the parts for later use. (Note: Get a wire-wrap receptacle for each ZIF socket. The ZIF socket isn't on .1 centers, and you shouldn't solder to it even if you could, but you can't!)

—Derick Moore, Director of Engineering

CALL FOR
Volume Discounts

SOLDERTAIL

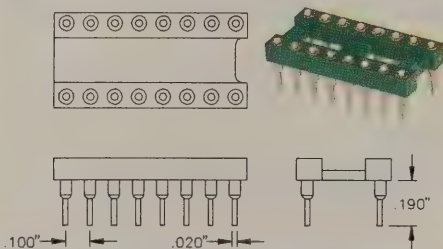
General purpose economical sockets. Dual-wipe contacts provide greater contact surface than single-wipe designs.



Part #	Pins	Width	1-24	25+
8 PIN ST	8	.3"	.09	.08
14 PIN ST	14	.3"	.09	.08
16 PIN ST	16	.3"	.12	.09
18 PIN ST	18	.3"	.15	.10
20 PIN ST	20	.3"	.15	.12
22 PIN ST	22	.4"	.15	.10
24 PIN ST	24	.6"	.18	.14
24STSK	24	.3"	.49	.42
28 PIN ST	28	.6"	.22	.15
32 PIN ST	32	.6"	.28	.21
40 PIN ST	40	.6"	.30	.23
64 PIN ST	64	.8"	1.95	1.65

MACHINE SCREW HI-RELIABILITY SOLDERTAIL

Machined-contact sockets provide lower contact resistance and greater retention, to prevent "IC walk-out" due to vibration. Sockets feature solder-tail pins.

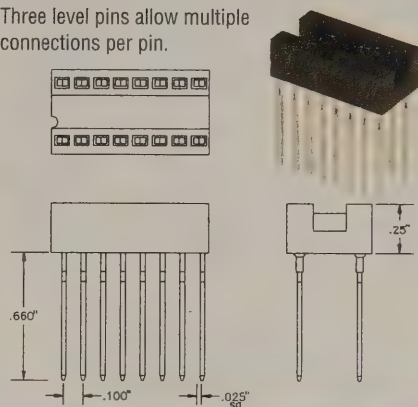


Part #	Pins	Width	1-24	25+
AUGAT08	8	.3"	.49	.45
AUGAT14	14	.3"	.59	.50
AUGAT16	16	.3"	.69	.59
AUGAT18	18	.3"	.79	.69
AUGAT20	20	.3"	.79	.69
AUGAT22	22	.4"	.89	.79
AUGAT24	24	.6"	.89	.79
AUGAT24SK	24	.3"	.95	.85
AUGAT28	28	.6"	1.09	.95
AUGAT32	32	.6"	1.19	1.05
AUGAT40	40	.6"	1.29	1.19
AUGAT48	48	.6"	1.69	1.59

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WIRE-WRAP (3 LEVEL)

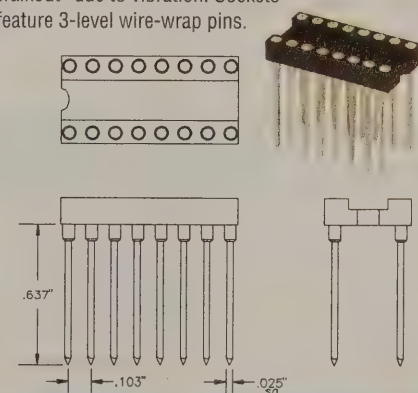
Three level pins allow multiple connections per pin.



Part #	Pins	Width	1-24	25+
8 PIN WW	8	.3"	.59	.49
14 PIN WW	14	.3"	.69	.59
16 PIN WW	16	.3"	.79	.69
18 PIN WW	18	.3"	.99	.79
20 PIN WW	20	.3"	1.09	.89
22 PIN WW	22	.4"	1.39	1.19
24 PIN WW	24	.6"	1.39	1.19
24WWSK	24	.3"	1.49	1.19
28 PIN WW	28	.6"	1.69	1.39
32 PIN WW	32	.6"	1.75	1.49
40 PIN WW	40	.6"	1.79	1.49

MACHINE SCREW HI-RELIABILITY WIRE-WRAP

Machined-contact sockets provide lower contact resistance and greater retention to prevent "IC walkout" due to vibration. Sockets feature 3-level wire-wrap pins.



Part #	Pins	Width	1-24	25+
AUGAT08WW	8	.3"	.99	.89
AUGAT14WW	14	.3"	1.29	1.09
AUGAT16WW	16	.3"	1.49	1.29
AUGAT18WW	18	.3"	1.79	1.49
AUGAT20WW	20	.3"	1.99	1.69
AUGAT22WW	22	.4"	2.19	1.99
AUGAT24WW	24	.6"	2.29	1.99
AUGAT24WWSK	24	.3"	2.39	2.25
AUGAT28WW	28	.6"	2.49	2.19
AUGAT32WW	32	.6"	3.19	2.89
AUGAT40WW	40	.6"	3.29	2.99

MODULAR CIRCUIT TECHNOLOGY UNIVERSAL PROGRAMMING SYSTEM



For just \$699, the MOD-EMUP from Modular Circuit Technology will program the vast majority of all programmable devices sold today, and with its pin-programmable design, will support most of the new devices yet to be introduced.

The "ACCESS" program shell featured below provides a consistent entry point for selecting the correct device from an extensive list of manufacturers and device types. Easy-to-use menus provide on-screen reminders of the options for each device, and simple one keystroke entries choose from among those options.

If your development needs go beyond the standard programmer, you may choose from a comprehensive list of PLCC, PGA and multiple DIP adaptor modules listed on the opposite page.

The MOD-EMUP is a tremendous bargain for anyone developing computers and other digital hardware. This reliable, cost-effective unit provides the features and functionality you'd expect in a unit costing several thousand dollars and it includes JDR's 1-year warranty. It's the smart choice for any developer's workbench!

- Programs devices from: Altera, AMD/MMI, AMI, Atmel, Catalyst, Cypress, Exel, Fujitsu, Gould, Harris, Hitachi, Hyundai, ICT, Intel, Lattice, Matsushita, Microchip/GI, Mitsubishi, Motorola, National Semiconductor, NEC, OKI, Ricoh, Rockwell, Samsung, Seeg, SGS-Thomson, Signetics, TI, Toshiba, VLI, Xicor, Xilinx and Zilog
- Programs EPROMs and CMOS EPROMs up to 4M bits including 27C101, 27C100, 571000 and 574000. Programs PROMs and microprocessors
- Programs standard PALs, GALs, PEELs, Logic Sequencers and PLD families: C, H, L, M, N, P, R, S, V and X; programs a wide variety of PLDs, EPLDs, EEPDs & FPLs



- Tests TTL & CMOS devices plus Static and Dynamic RAM such as 62256's and 414256's

- Includes 8-bit 8088 or 286/386/486 PC compatible card; uses bus address 200, 210...2F0

- Zero Insertion Force socket accepts all DIP ICs from 8-40 pins; switch allows you to answer questions without returning to the keyboard

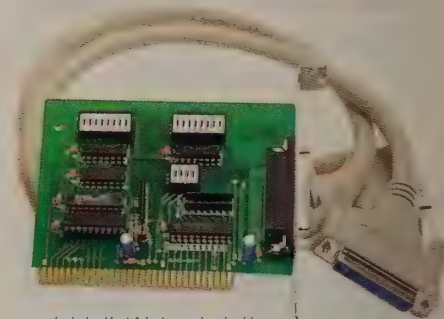
- Programming selections include: Erase, Blank Check, Program, Verify, Read, Compare, Edit, Load, Save and Security Fuse Blow; performs 2 and 4-way splits and shuffles; Utilities to convert popular file formats such as Hex and Extended Hex

- Includes programmer, PC Host adaptor card, cable and software

MOD-EMUP 3 lbs \$699.00

MOD-EMAC 2 lbs \$39.95

Additional host adaptor card and cable



Includes Host Adaptor card and cable

TECH TIP

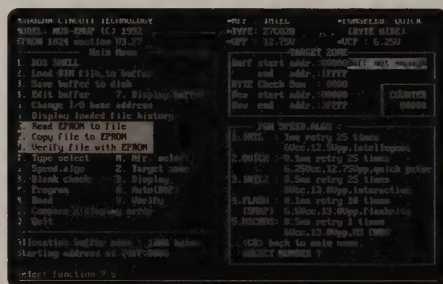
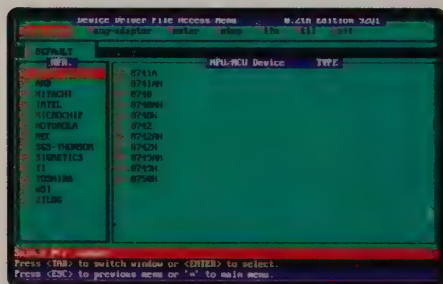
"Always consider the purchase of a CUPL or PALASM compiler when developing with Programmable Logic Devices. These programs not only enable you to express your logic in simple mathematical terms, but also reduce and optimize your equations for the fastest response while minimizing the circuits."

-R.B.

USER-FRIENDLY SOFTWARE MAKES PROGRAMMING QUICK & EASY!

JDR's Universal Programming System (sold above) includes a menu-driven user interface to get you producing quickly! Simply select the manufacturer and device type. The software determines which programming module to run and starts it for you. There is no need to remember which software module goes to which device! Separate menus exist for each device family at the programming level.

The menu-driven interface simplifies the options screens and reduces screen clutter. Single keystroke commands also make programming simpler and faster. During the programming process, the MOD-EMUP's front panel pushbutton can be used to answer prompts, preventing the operator from having to reach to the keyboard.



"...May I say how much I have appreciated the excellent service and technical support provided by your organization? I don't think I could have finished the job without them. And particularly may I congratulate you on your first-class documentation and packaging.

Please keep up the good work."

—Hugh Aitken
Amherst, MA

CUSTOM ADAPTOR MODULES

Designed for our MOD-EMUP universal programmer, these adaptor modules enable you to program a variety of additional devices. They also provide support for various package styles. Modules include software where applicable. High quality Zero Insertion Force sockets provide years of reliable operation.

Part #	Description	Price
MUP-SIP-SIMM	DRAM test module for SIP/SIMMs	189.95
MUP-C751	87C751 and 87C752 series DIPs	149.95
MUP-PGA-8796	Intel 8796BH and 87C752 PGAs	179.95
MUP-8796PLCC	8795BH, 8798, 8796BH & 8797BH 48-pin DIP & 68-pin PLCC	149.95
MUP-68701	Motorola 68701 and 68701U4	169.95
MUP-68705	2 socket 68705 series 28/40 pin DIPs	179.95
MUP-68HC705	Motorola 68HC705C8	169.95
MUP-Z86E08	Zilog Z86E08	189.95
MUP-PLCC-EP	PLCC EPROMs up to 1Mb	139.95
MUP-N3001	Toshiba N3001, Intel 27C400 series EPROMs	259.95
MUP-PIC16	Microchip PIC16C54 series	189.95
MUP-PLCC-320	TI TMS320E25 PLCC	169.95
MUP-PLCC-C451	87C451 PLCC	169.95
MUP-PLCC-C552	87C552 PLCC	169.95
MUP-PLCC-C711	68HC711K4 PLCC	169.95
MUP-NSDPAL	NS D-type 16L8, 16R8, 20L8, 20R8 family	139.95
MUP-PLS	Programmable Logic Sequencers	139.95
MUP-1210	Altera EP1200 and EP1210 series	129.95
MUP-PLCC-1810	EP180 family & 5C180 PLCC EPLDs	189.95
MUP-26CV12	GAL26CV12 & PALCE26V12 series	129.95
MUP-MAX	Altera EPM5016 and EPM5032	169.95
MUP-PLCC-2500	Atmel AT2500 PLCC and DIP	169.95
MUP-PLCC-MACH	AMD MACH110 & MACH210 PLCC	169.95
MUP-PLHS473	Signetics PLHS473	129.95
MUP-PLS100	Signetics PLS100 & PLS101	129.95
MUP-TICPAL	TIC16L8 CMOS family	129.95
MUP-MAX-50C	Altera word-wide EPN5128 PLCC68	189.95
MUP-ATV5000	Atmel ATV5000 68-pin PLCC	199.95
MUP-MAX-50B	Altera EPM5064 44-pin PLCC	189.95
MUP-4618A	Hitachi HD4074618 80-pin QFP	229.95
MUP-H8/325	HD6473258C/P 64-pin SDIP and 64-pin QFP	269.95
MUP-MB7100	Fujitsu MB71 series 32-pin DIP	149.95
MUP-H8/330	Hitachi HD7473308F/CP 84-pin PLCC and 80-pin QFP	299.95

ROM EMULATOR MODULES

These handy RAMROM modules are ideal for prototyping. They utilize battery-backed CMOS static RAM to emulate a PROM. Saves time—no need to repeatedly erase EPROMs. Includes rechargeable Ni-Cad battery. Compatible with our MOD-EMUP only (sold on opposite page).

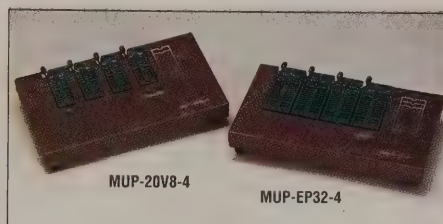


Part #	Description	Price
MUP-RAMROM16	Emulates 2K x 8 EPROMs	129.95
MUP-RAMROM32	Emulates 4K x 8 EPROMs	139.95
MUP-RAMROM256	Emulates 32K x 8 EPROMs	149.95
MUP-RAMROM512	Emulates 64K x 8 EPROMs	159.95

CALL FOR.....
Volume Discounts

4-GANG ADAPTOR MODULES

Save time with these multiple device programmer adaptors. They are ideal for larger volume programming. Gang adaptor modules include software for programming up to four devices at one time. High quality Zero Insertion Force sockets provide years of reliable operation. Compatible with our MOD-EMUP only (sold on opposite page).

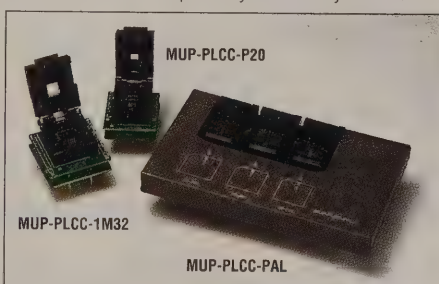


MODULAR CIRCUIT TECHNOLOGY

Part #	4 Gang Adaptor For	Price
MUP-EP32-4	32-pin DIP EPROMs	99.95
MUP-EP32S	32-pin DIP byte-wide EPROMs	149.95
MUP-EP32A-PLC	32-pin PLCC EPROMs 2764-27512 N/C on pins 1, 12, 17 and 26	299.95
MUP-EP32B-PLC	32-pin PLCC byte-wide EPROMs over 1Mb	299.95
MUP-EP40-4	40-pin DIP EPROMs	139.95
MUP-EP40-PLCC	44-pin PLCC EPROMs over 1Mb N/C on pins 1, 13, 23 and 33	299.95
MUP-51-4	8751 MPUs	149.95
MUP-48-4	8748 MPUs	149.95
MUP-16V8-4	16V8 family EPLDs	139.95
MUP-CE16V8-4	CE16V8 family EPLDs	139.95
MUP-18CV8-4	PEEL18CV8 family EPLDs	139.95
MUP-20V8-4	20V8 family EPLDs	139.95
MUP-CE20V8-4	CE20V8 family EPLDs	139.95
MUP-GAL22V10	24-pin DIP GAL 22V10	179.95

PLCC/QFP CONVERTERS

These optional DIP to PLCC/QFP* adaptors allow you to program the latest PLCC/QFP devices in any manufacturers' programmer that supports the DIP device. High quality Zero Insertion Force sockets provide years of worry-free use.



MODULAR CIRCUIT TECHNOLOGY

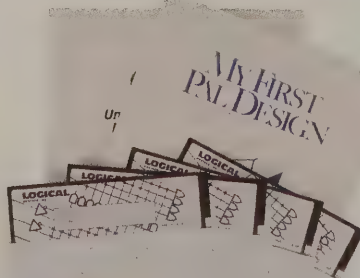
Part #	Description	Price
MUP-PLCC-MPU	8748, 8751 & 8742 family, 44-pin PLCC	149.95
MUP-PLCC-C751	87C751, 28-pin PLCC, 28-pin PLCC	169.95
MUP-PLCC-610	EP600 and EP610, 28-pin PLCC	99.95
MUP-PLCC-910	EP900, EP910 and EP1210, 44-pin PLCC	139.95
MUP-PLCC-P20	Common PLDs like 16V8, EP320, PLS153, 20-pin PLCC	99.95
MUP-PLCC-P20A	28-pin PLDs, N/C on pins 1, 8, 15, 22, 28-pin PLCC	109.95
MUP-PLCC-P20B	28-pin PLDs, N/C on pins 5, 8, 11, 19, 28-pin PLCC	109.95
MUP-PLCC-PAL	3 socket adaptor for PLD's **, 28-pin PLCC	149.95
MUP-PLCC-512	2716-27512 EPROMs, 32-pin PLCC	119.95
MUP-PLCC-1M32	8-bit EPROMs to 1Mb, 32-pin PLCC	129.95
MUP-PLCC-1M44	16-bit EPROMs to 2Mb, 44-pin PLCC	139.95
MUP-QFP-51	8748, 8751 and 8742 family, QFP*	99.95

* Quad flat pack

** Combined features of MUP-PLCC-P20, 20A, and 20B

PAL PROGRAM DEVELOPMENT SOFTWARE

Use our CUPL Starter Kit to program the most common PLDs. This entry-level package provides the most-needed features of a complete CUPL system at a great price! A menu-driven environment automatically edits source and list files to improve the debugging process. Includes a comprehensive library of design examples. The compiler-based software can reduce equations into Sum-of-Products and Product-of-Sums forms.



- Supports these common devices: 16L8, 16R4, 16R6, 16R8, 20L8, 20R4, 20R6, 20R8 and 20L10
- Supports these manufacturers: AMD, Cypress, MMI and National Semiconductor
- Optimizations include none, quick, Quine McCluskey, Presto & Espresso; reports include expanded product terms, fuse-plot and chip diagrams
- Software supports JEDEC, ASCII-HEX, HL PDF and PALASM output formats
- Includes user manual and sample source code

MOD-MPL-SOFT 1 lb\$99.95

PAL-EXPERT 3 lbs\$399.95

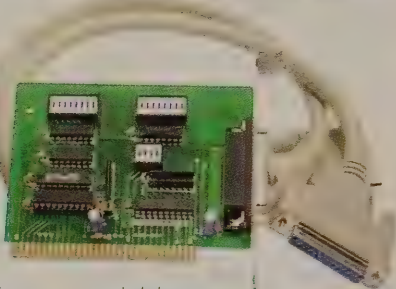
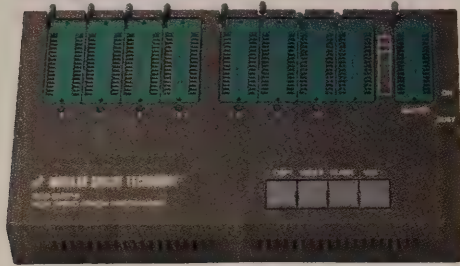
Advanced version supports over 100 devices

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HIGH-SPEED 8M EPROM PROGRAMMER

Save time and energy with the MOD-EMEP-8 high-speed programmer from Modular Circuit Technology. Using



Eprom programmer includes an 8-bit 8088 and 286/386/486 PC compatible controller card and cable



MODULAR CIRCUIT TECHNOLOGY

Quick Pulse Programming, this unit programs up to eight 27256 devices in as little as 20 seconds! The flexible design lets you program from your 8088 or 286/386/486 PC compatible or from the stand-alone control unit MOD-HMDL, sold at right, freeing up your computer for other purposes. This design makes it ideal for high-volume programming applications or in non-PC accessible locations.

- Programs EPROMs, CMOS EPROMs, page mode EPROMs and EEPROMs up to 8 megabit. Programs standard devices from 2716-27512 including 27C101, 27C201, 27513, 27011 and 28C256
- Programs eight 27256 devices in about 20 seconds using Quick Pulse Programming
- Programs up to 8 devices simultaneously, additional operation keys on programmer for convenient EPROM mass production
- Menu-driven software functions include Blank Check, Read, Verify, Program, file loading and saving, screen editing for binary and ASCII data; HEX to BINARY converter for Intel HEX, Motorola HEX and Tektronics HEX; 2 and 4-way BINARY file splitter/shuffler; dump file console in BINARY format.
- Includes programmer, PC Host adaptor card, cable and software; optional stand alone host module sold at right

MOD-EMEP-8 4 lbs \$499.95

STAND-ALONE HOST MODULE

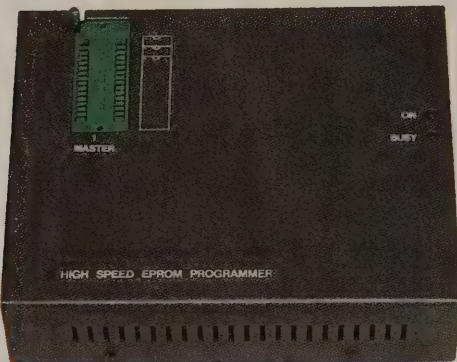
Use your programmer away from your computer! This self-contained Host Module allows a MOD-EMEP-8 high-speed EPROM programmer to operate in a remote location. The self-contained software reads and programs EPROMs. It prompts for the manufacturer and device type, just like the PC-based software! For ease of use, all commands are displayed in English, using a 4-line LCD display.



- For use with MOD-EMEP-8
- 64 character, 4 line LCD displays manufacturer's name, IC type and current command
- ROM-based software, self-tests & diagnostics when system starts up or resets
- Automatically saves current IC type in EEPROM before system shuts down, saving you time on next power-up
- External 110VAC power supply
- Includes metal brackets to mount units together, cable, power supply and manual

MOD-HMDL 3 lbs \$399.95

ADVANCED EPROM PROGRAMMERS FROM MCT!



Both programmers include an 8-bit 8088 and 286/386/486 PC compatible controller card and cable



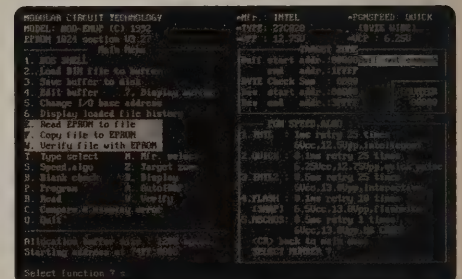
MODULAR CIRCUIT TECHNOLOGY

Modular Circuit Technology's EPROM programmers feature an improved development interface and a device selection guide that is user friendly. Instead of consulting a wall chart when you change a manufacturer or device type, the easy-to-use menu-driven software provides an on-line programming guide at the touch of a help key.

Each programmer is capable of programming up to 8 megabit 27xxx and 27Cxxx series 12.5V devices. Each includes an 8-bit interface card cable and complete software. Two LEDs indicate status to prevent unintentional removal or insertion at the wrong time.

Additional included software allows "splitting" and "shuffling" of 8, 16 and 32-bit code for byte, word and double-word systems development.

- Programs devices manufactured by AMD/MMI, Atmel, Catalyst, Fujitsu, Hitachi, Intel, Microchip, Mitsubishi, MXIC, National Semiconductor, NEC, OKI, Ricoh, Samsung, Seag, Sharp, Signetics, S-MOS, SGS, TI, Toshiba, VLSI, WSI and Xicor
- Programs most devices from 2716-27512 including 27C100, 27C101, 27C301, 27C1000, 27C1001, 27C2001, 27C4001 and others
- Includes dedicated 8-bit 8088 and 286/386/486 PC compatible controller card with 16 device starting addresses



The included menu-driven software lets you simply choose the manufacturer and EPROM type—the computer does the rest!

- Intelligent and Quick Pulse support for fastest programming. One ZIF Zero Insertion Force socket, accepts 0.6" wide DIP ICs up to 32 pins
- Software functions include Manufacturer and Device type selection, Read, Compare, Blank Check, Auto Program, Verify, Display, Load and Save files, Edit and Display buffer, Setup, hex to binary converter, 2- and 4-way file splitter and 2- and 4-way file shuffler

MOD-MEP-1A 3 lbs \$199.95

MOD-MEP-4A 3 lbs \$269.95
4-Gang programmer

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PORTABLE IC TESTER

Our hand-held IC tester is an easy-to-operate, cost-effective unit with superb functionality. It can easily pay for itself by reducing development time and identifying unmarked parts. The LCD display presents simple menu-like prompts in English, making operation easy and intuitive. It supports the following common families of ICs: 74 series TTL, 40 and 45 series CMOS and 41/44 series DRAM up to 1Mb.



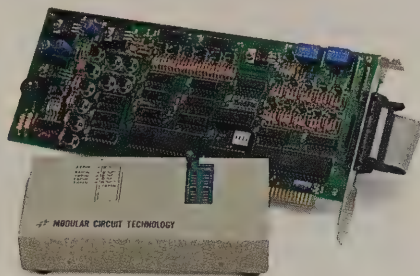
MODULAR CIRCUIT TECHNOLOGY

- Supports 74 series TTL, 40 and 45 series CMOS and 41/44 series DRAM up to 1Mb
- Hand-held unit tests and identifies common 14 to 20-pin devices
- Includes 16-character LCD display, 20-pin 0.3" ZIF socket, test, search and device-type keys

MOD-HIC 4 lbs \$149.95

PAL PROGRAMMER

The MOD-PAL includes support for the latest 20 and 24-pin Programmable Logic Devices and does so at a great price! If you are new to programmable logic, we suggest you consider pairing this programmer with MOD-MPL-SOFT, sold on page 35. Together they make a great learning tool and development team!



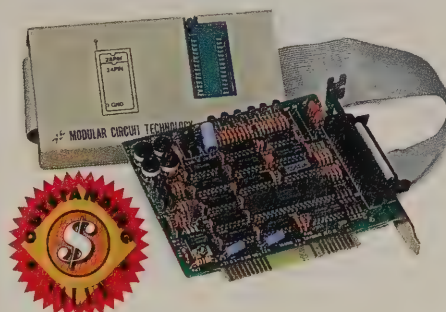
MODULAR CIRCUIT TECHNOLOGY

- Programs AMD, MMI, NS and TI PLDs in 10, 12, 14, 16, 18 and 20 series
- Includes 8-bit card, user-selectable addresses from 200 to 2FOx
- Zero Insertion Force socket accepts 0.3" wide 20 and 24-pin DIP ICs
- Load file, Save file, Edit Edit, Blank check, Master, Verify and Compare modes. Easy-to-use menu-driven software features JEDEC file compatibility. Compatible with PAL development software sold on page 35

MOD-PAL 2 lbs \$269.95

EPROM PROGRAMMER

This economical programmer provides the professional or hobbyist with an effective tool for programming most general-purpose EPROMs. Menu-driven software allows easy manipulation of data files, splitting or combining the contents of several EPROMs and many other functions. It programs up to 512K bit devices in up to 28-pin DIP packages. Supports Hex and Intel Hex data file formats.



MODULAR CIRCUIT TECHNOLOGY

- Programs EPROMs to 27512
- Program Voltages include 12.5V, 21V and 25V
- Zero Insertion Force socket accepts 0.6" wide DIP ICs to 28 pins
- Software handles Load file, Save file, Edit buffer, Blank check, Program, Read master and Verify modes

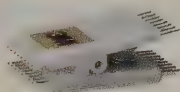
MOD-EPROM 2 lbs \$129.95

3M TEST CLIPS

These 3M test clips have a patented design for trouble-shooting or development work. Positive clamping action ensures good contact--no intermittents. Rugged thermoplastic body is molded around contact pins to prevent shorts.

DIP

Part #	# Pins	Price
TC-16	16	4.95
TC-20	20	6.95
TC-24	24	8.95
TC-28	28	9.95
TC-40	40	12.95



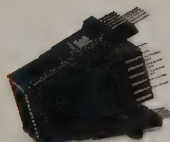
SOJ/SOIC

Part #	# Pins	Price
SOIC8	8	6.95
SOIC14	14	6.95
SOIC16	16	6.95
SOIC20	20	7.95
SOIC24	24	8.95
SOIC28	28	9.95



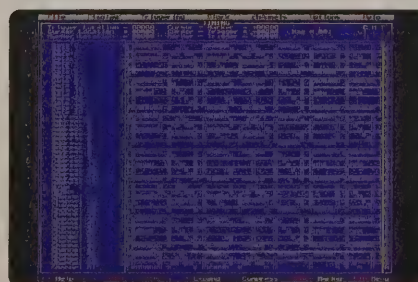
PLCC

Part #	# Pins	Price
PLCC20TC	20	19.95
PLCC28TC	28	20.95
PLCC44TC	44	26.95
PLCC68TC	68	29.95
PLCC84TC	84	39.95



DIGITAL LOGIC ANALYZER

This Digital Logic Analyzer uses your computer to test circuits! Each 8-bit 8088 or 286/386/486 compatible Logic Analyzer Card traces up to 16 channels and up to 4096 states. You can combine up to 4 interfaces for large systems development. Select internal and external triggers



through software. Included software displays data in graphical timing diagrams, numerical state tables, a logic probe mode or in event counter/timer modes. Name and group signals for easy reference. Menu-driven software includes hot keys.

- 8-bit 8088 or 286/386/486 PC compatible card
- 25MHz maximum sample rate; 4K per channel buffer
- 16 channels per card, 4 cards maximum
- Manual and automatic trigger modes
- Internal and external source, select polarity and frequency, use up to 2 external qualifiers
- 16 digital channels, 2 clock qualifiers, trigger qualifier, external trigger and external sample clock
- Graphical timing diagrams, numerical state tables, a logic probe mode & event counter/timer modes
- Includes interface card, external pod with micro-hooks, software and instruction manual

LA16PC 3 lbs \$899.95

TECH TIP

"Test clips are ideal for production testing. Instead of attaching your analyzer leads to each circuit you are testing, save time and effort by attaching the analyzer leads to the test clips." -R.B.

SELF-POWERED BREADBOARD

An essential prototyping tool for the hobbyist or professional! This solderless breadboard has three built-in power supplies. You'll get more workspace and reduce potential workbench hazards. The sturdy metal frame anchors the breadboards and resists bending. Students and engineers alike will appreciate the portability of their developing circuits.




- 110VAC, 50/60Hz
- Built-in power supply provides +5V @ 1A, 0 to +15V @ 500mA, 0 to -15V @ 500mA
- 4 binding posts for power and over 2400 tie points
- 3 large distribution strips, 640 tie points each, and 5 small distribution points, 100 tie points each; all points are matrix-labelled
- 8"L x 10-1/2"W x 2-3/4"H

PDS-500 2 lbs \$89.95

SOLDERLESS BREADBOARDS

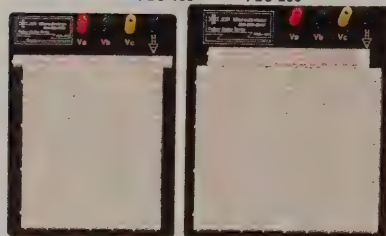
JDR's durable Project Design Series breadboards are suitable for nearly every type of circuit design work. Breadboards with binding posts have solid aluminum backing.

- Nickel plated insertion clips rated for approximately 5000 insertions/removals
- Numbered rows improve prototyping speed

 JDR Microdevices®



PDS-100 PDS-200



PDS-300 PDS-400

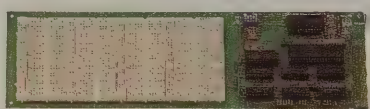
Part #	Size L x W	Dist Strips	Term. Strips	File Pts	Bind Posts	Price
PDS-30	6.50" x 0.38"	2	0	0	0	2.95
PDS-70	6.50" x 1.38"	0	1	630	0	5.49
PDS-100	8.45" x 3.94"	1	2	1260	2	11.95
PDS-200	8.45" x 5.13"	4	2	1260	3	17.95
PDS-300	9.06" x 6.88"	5	3	1890	4	22.95
PDS-400	9.45" x 8.25"	7	4	2520	4	31.95

Shipping weight 2 lbs each

PC BUS BREADBOARDS WITH DECODE LOGIC

Develop and test your PC compatible circuits in your computer without having to wirewrap! Our breadboards simplify the design of a new circuit by providing you with the required decode and buffer circuits. We even include timers and parallel ports! Available in 8 and 16-bit versions with and without circuitry. Each signal test point and breadboard location is clearly defined.

 JDR Microdevices®



- 8-bit 8088 or 286/386/486 PC compatible card
- All address and data bus lines are buffered to provide signal isolation for safe prototyping
- Address decode provided by GAL20V8 which allows reprogramming for user-specific applications
- 8255-5 Parallel Peripheral Interface supplies three 8-bit ports for control; 8253-5 counter timer has three 16-bit registers to user-program as counters, timers or single-shot outputs. External test points allow cascading for higher counts
- Easy connections using jumper wire or standard telephone hook-up wire

PDS-601 2 lbs \$79.95

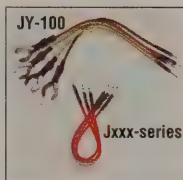
PDS-611 2 lbs \$89.95
16-bit version with decode circuitry

PDS-600 2 lbs \$49.95
8-bit version without decode circuitry

PDS-610 2 lbs \$59.95
16-bit version without decode circuitry

REINFORCED JUMPER WIRES

For breadboard work. J-series wires have reinforced formed pins at each end; JY-series have 1 "Y" clip terminal end for easy connection to power posts.



Part #	Length	Qty	Color	Price
J-50	50mm	10	Brown	1.99
J-70	70mm	10	Gray	2.29
J-100	100mm	10	Orange	2.49
J-150	150mm	10	Purple	2.69
J-200	200mm	10	Blue	2.89
JY-100	100mm	4	Y/G/B/R	.99

JUMPER WIRE KIT

Case includes 25 pieces each of 22 gauge jumper wire in .1, .2, .3, .4, .5, .6, .7, .8, .9, 1, 2, 3, 4 and 5" pin-to-pin lengths.



WJW-60B 1 lb \$11.95

PC INTERFACE TRAINER

Learn to design and prototype interface cards for your PC compatible system using our PC Interface Trainer. It includes a training manual with circuits and software for stepper motor, keyboard, monitor, Centronics, counter/timer, A/D, D/A and a serial port interface. The system includes a PC compatible interface card and a training module. The module provides a built-in power supply and complete access to the PC's bus.



Components not included

- 8-bit 8088 or 286/386/486 PC compatible interface; all PC bus signals are buffered
- Includes training manual with circuits and software for stepper motor, keyboard, monitor, Centronics, Counter/Timer, A/D, D/A and serial port interface
- 3.5mm logic probe adaptor, BNC output and sync, over 3000 tie points, including access to all PC compatible signals
- 4 large distribution strips, 640 tie points each and 5 small distribution strips, 100 tie points each; all points are matrix-labelled
- Built-in power supply provides: +5V @ 3A, +12V @ 1A, -5V @ 0.5A, -12V @ 0.5A
- 110VAC, 50/60Hz, U/L approved

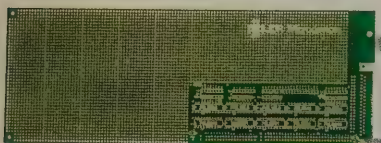
PDS-1000 10 lbs \$399.95

"...I personally have purchased several computers from you since the mid-80's and built them for myself and friends, and I know that the quality is good. And the one time I needed some technical support, I was able to get through the first time and had the system running in no time with their help."

—Steve Krattiger
Calabasas, CA

16-BIT PROTOTYPE CARD WITH DECODE LAYOUT

This card speeds up the implementation of new PC compatible hardware. It buffers the address, data and handshake signals, protecting both your design and test computer. A PAL-based decode circuit can be modified for alternative addressing schemes.



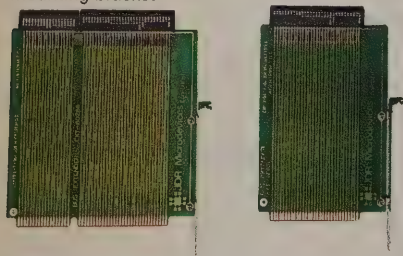
- 16-bit 286/386/486 PC compatible card
- Layout includes PAL-based decoder
- Plated-through holes, silk-screened legends and gold-plated edge card connectors with power and ground planes labelled component and test points
- Includes mounting bracket, card guide and documentation; project ideas and instructions

JDR-PR10 1 lb	\$34.95
JDR-PR10-PK 1 lb	\$12.95
Parts kit JDR-PR10 decode circuitry	
JDR-PR16 1 lb	\$49.95
For 16-bit Microchannel	
JDR-PR16-PK 1 lb	\$15.95
Parts kit for JDR-PR16 decode circuitry	
JDR-PR16V 1 lb	\$39.95
16-bit Microchannel card with video has extended edge connectors for video applications	
JDR-PR32 1 lb	\$69.95
32-bit Microchannel card	
JDR-PR32E 1 lb	\$79.95
32-bit EISA bus card	

PC EXTENDER CARDS

Simplify prototyping and testing! These PC extender cards feature:

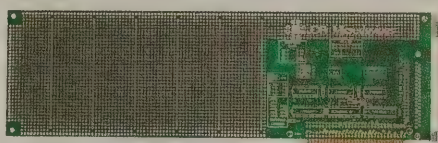
- Ground planes for quiet operation
- Solder mask to prevent shorting
- FR4 epoxy glass laminate PC board
- Mounting bracket



EXT-8088 1 lb	\$29.95
8-bit ISA for 8088 motherboards	
EXT-80286 1 lb	\$39.95
16-bit ISA for 286/386/486 motherboards	
EXT-16 1 lb	\$69.95
16-bit Microchannel for IBM PS/2	
EXT-32 1 lb	\$99.95
32-bit Microchannel for IBM PS/2	
EXT-32E 1 lb	\$99.95
32-bit EISA	

8-BIT PROTOTYPE CARD WITH DECODE LOGIC

Design and prototype 8-bit cards for your PC compatible! This card includes address decode and buffering circuits, so you don't have to wirewrap them. The decode circuitry can be modified to suit your specific application. Each bus signal is silk-screened on the card for easy access and test. The instruction manual includes an example clock circuit with software in BASIC and assembly languages.

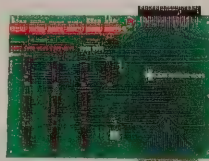


- 8-bit 8088 or 286/386/486 PC compatible cards
- Buffering and decode layout, 37-pin D-SUB connector layout, +5V and ground planes
- Select ports 300 to 31Fx or use any address block from 200-3FFx (without decoding)
- Labelled component and test points; holes plated
- Includes mounting bracket, card guide and documentation, project suggestions and instructions for beginners
- Plated-through holes, silk-screened legends and gold-plated edge card connectors with power & ground planes

JDR-PR2 1 lb	\$29.95
JDR-PR1 1 lb	\$27.95
8-bit card without decode circuitry	
JDR-PR2-PK 1 lb	\$8.95
Parts kit for JDR-PR2 decode circuitry	

DEBUGGING AND EXTENDER CARD

The JDR FrontPanel aids hardware and software developers alike. Use it to detect memory, I/O port and data bus accesses. A top-mounted connector serves as an 8-bit bus extender. Easy-to-use switches allow detection of matches exactly or on paragraph, page, block or segment boundaries. Matches can generate interrupts and/or trigger external test equipment. Program execution can optionally pause. LEDs display the match, address and data bus status.



- 8-bit 8088 or 286/386/486 PC compatible card
- IOCHECK line NMI, or IRQ 2, 5, 7 can be asserted when match occurs
- Address and data bus LEDs light on match
- Scope sync point true on every match; match on paragraph, block, page or specific address; enable/disable match on Read/Write, IO/Mem, Data, DMA, or external event
- Includes instructions with examples

FRONTANEL 1 lb	\$99.95
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WIRE-WRAP PROTOTYPE BOARDS

Our line of prototype boards feature high quality .062" FR4 epoxy glass with .042" drilled holes and gold-plated edge connectors. Power and ground grid.



22/44 PIN EDGE CARDS (.156" SPACING)

JDR-PR446 4.5" x 6.0"	\$15.95
JDR-PR449 4.5" x 9.0"	\$19.95
44P-ST Solder-tail connector for above	\$3.95
44P-WW Wire-wrap connector for above	\$4.95

36/72 PIN EDGE CARDS (.1" SPACING)

JDR-PR726 4.5" x 6.0"	\$15.95
JDR-PR729 4.5" x 9.0"	\$19.95
72P-ST Solder-tail connector for above	\$6.95
72P-WW Wire-wrap connector for above	\$7.95

S-100 COMPATIBLE CARDS

JDR-PR100	\$23.95
JDR-PR100P With voltage regulator layout	\$24.95
100P-ST Solder-tail connector for above	\$6.95
100P-WW Wire-wrap connector for above	\$7.95

Shipping weight 1 lb each



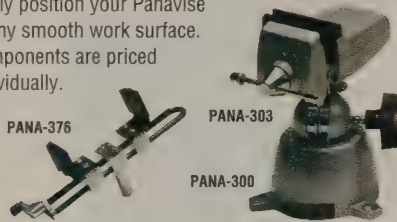
TECH TIP

"Our general purpose prototype boards with power and ground planes can replace horizontal and vertical bus boards as well as boards without power/ ground bus structure. The unique 8-4-8 spacing means you are never more than about 1/2-inch from a power pin, and that you can place IC's back to back or .1" apart across the boards."

—D.M.

QUALITY PANAVISE TOOLS

The best-selling Panavise standard head tilts, turns and rotates to almost any angle and opens up to 2-1/4" via a heavy-duty adjusting screw. The base attaches permanently to your workbench with three screws. The optional vacuum base allows you to firmly position your Panavise to any smooth work surface. Components are priced individually.



PANA-303 3 lbs Standard head	\$20.95
PANA-376 3 lbs Extra-wide opening	\$31.95
PANA-300 5 lbs Standard base	\$17.95
PANA-380 4 lbs Vacuum base	\$28.95
PANA-308 1 lb Weighted base	\$19.95
PANA-311 1 lb Bench-clamp base	\$31.95
PANA-312 1 lb Tray base	\$18.95
PANA-315 1 lb Circuit board holder 6" arms to 12" wide	\$23.95
PANA-318-16 1 lb 6" crossbar for PANA-315. Extends to 16" wide	\$5.05
PANA-343 1 lb Nylon jaws for PANA-303	\$2.45
PANA-344 1 lb Grooved nylon jaws for PANA-303*	\$3.45
PANA-352 1 lb Teflon jaws for PANA-303*	\$7.95
PANA-353 1 lb Plated steel jaws for PANA-303*	\$5.45
PANA-354 1 lb Brass jaws for PANA-303*	\$6.95
PANA-346 1 lb Deluxe neoprene jaws for PANA-376*	\$2.95

*All jaws are 2-1/4" wide

CRIMP PRESS FOR CABLE ASSEMBLY

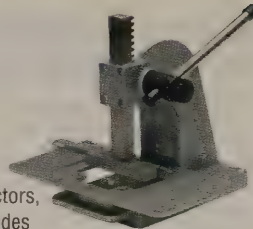
More efficient than hand crimp
Accepts PanaVise, Shattuck and Paladin die sets.



PANA-560 8 lbs	\$129.95
PANA-563 2 lbs Upgrades PANA-560 to PANA-505	\$79.95
PANA-565-0001 1 lb RG58/59/62 coaxial die	\$24.95
PANA-565-0011 1 lb 8-22 AWG wire no insulation	\$24.95
PANA-565-0014 1 lb 8-20 AWG insulated	\$24.95
PANA-565-0017 1 lb RG59 round die	\$49.95
PANA-565-3013 1 lb RJ45 connectors	\$54.95
PANA-565-3014 1 lb RJ11 connectors	\$54.95
PANA-565-3015 1 lb DEC RJ11 connectors	\$69.95

IDC BENCH ASSEMBLY PRESS

For assembling connectors, cables and plugs. Includes base and standard platen.

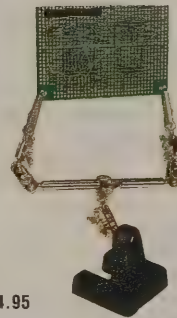


PANA-505

PANA-505 7 lbs	\$154.95
PANA-507 1 lb Flat ribbon cable cutter	\$59.95
PANA-508 1 lb Strip header cutter	\$56.95
PANA-510 1 lb Connector base plate	\$24.95
PANA-511 1 lb Card edge base plate	\$24.95
PANA-512 1 lb DIP plug base plate	\$24.95
PANA-513 1 lb D-SUB base plate	\$24.95
PANA-562 8 lbs Upgrades 505 to 560	\$39.95

ADJUSTABLE SOLDERING CLAMP

This handy clamp holds the part you want to solder, leaving both of your hands free for soldering. Order a couple of these for your next big project!



TSH-005 2 lbs	\$4.95
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KWIK STEPPER™ MULTIPLE-HOLE STEP BITS

- Self-starting tip resists walking or skidding, even on curved surfaces; unique design cuts through material faster
- Balanced, double-flute construction requires less pressure
- Cuts through up to 30 gauge mild steel, copper, brass, aluminum, wood, plastic and laminates



Part #	Overall length	Bit size	Sh. wt.	Price
GL34401	3-1/8"	1/2"	1 lb	22.95
GL34403	3-5/16"	7/8"	2 lbs	31.95
GL36413	2-1/4"	1-1/8"	2 lbs	44.95
GL36414	2-7/8"	1-3/8"	3 lbs	52.95

TOLL FREE DAY OR FAX NIGHT
800.538.5005

GREENLEE CHASSIS PUNCHES ROUND METAL KNOCKOUT PUNCH UNITS

Greenlee's complete units consist of a punch, die and draw stud. Operate manually using a wrench to turn the threaded draw stud into the mating threads of the punch. This draws the punch into the die, shearing a hole in the material being punched. They can also be operated with a ratchet or hydraulic punch drivers. Requires a pilot hole large enough to insert the draw stud through.



- Clean, fast and accurate holes
- Made of fine quality, hardened steel
- Punches milled steel up to 10 gauge (3.0 mm)
- Used for chassis, cabinets, boxes, panels, electronic equipment, etc.

Part #	Gauge Capacity	Punch Size	Sh. wt.	Price
GL02408	16/1.5 mm	1/2"	1 lb	21.95
GL02409	16/1.5 mm	5/8"	1 lb	23.95
GL20667	14/2.0 mm	3/4"	1 lb	25.95
GL20670	14/2.0 mm	1.0"	1 lb	29.95
GL20671	14/2.0 mm	1-1/8"	1 lb	29.95
GL20673	16/1.5 mm	1-1/4"	1 lb	29.95
GL25427	10/3.0 mm	1-3/8"	2 lbs	41.95
GL25428	10/3.0 mm	1-1/2"	2 lbs	46.95
GL25350	10/3.0 mm	1-3/4"	2 lbs	56.95
GL20676	10/3.0 mm	2.0"	2 lbs	69.95

D-SUB PANEL PUNCHES

Greenlee D-sub panel punches offer these important features:



- Fast, accurate panel punching--no sawing or filing!
- Cut-out and mounting slots are punched in one operation
- Drill only one 7/16" pilot hole
- Crafted from the very finest hardened steel
- Punches through 16 gauge (1.5 mm) milled steel and 10 gauge (3.5 mm) aluminum
- Punches include molded, hard plastic cases

Part #	Description	Price
GL34436	9-PIN D-SUB Cutout	299.00
GL34437	15-PIN D-SUB Cutout	299.00
GL34420	25-PIN D-SUB Cutout	299.00
GL34429	37-PIN D-SUB Cutout	325.00
GL34444	50-PIN D-SUB Cutout	325.00

Shipping weight 3 lbs

ORDER TOLL FREE
800-538-5000
24 HOURS A DAY!

SPECIALTY TOOLS

STRIPPER/CUTTER

12-24 AWG
HT-107 1 lb\$2.49



CRIMPING TOOL

HT-213 1 lb\$9.95



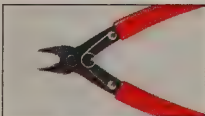
CONNECTOR/ TERMINAL CRIMPER

HT-202B 1 lb\$7.95



5" DIAGONAL CUTTER

HT-109 1 lb\$2.49



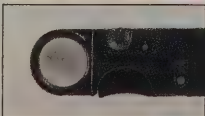
RJ-45 CRIMPER

With ten 8P8C RJ45 connectors
HT-210A 1 lb\$14.95



COAX STRIPPER

For RG58/59 coax cable
HT-302 1 lb\$9.95



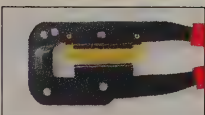
COAX CRIMPER

For RG58/59 coax cable
HT-301A 2 lbs\$16.95



IDC CONNECTOR CRIMPER

HT-214 2 lbs\$14.95



RJ-11 CRIMPER

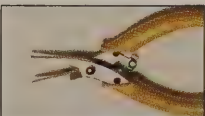
Tool with fifty 6P4C RJ11
connectors
HT-2037 1 lb\$18.95



UNIKRAFT HAND TOOLS

4-1/2" DIAGONAL CUTTERS

76-0231 1 lb\$4.95



5" ROUND NOSE PLIERS

76-0232 1 lb\$4.95



5-1/4" BENT NOSE PLIERS

76-0233 1 lb\$4.95



5-3/8" LONG NOSE (1/2-ROUND)

76-0234 1 lb\$4.95



5-3/8" LONG NOSE (FLAT) PLIERS

76-0235 1 lb\$4.95



25-PIECE COMPUTER SERVICE TOOL KIT

This kit contains the tools most frequently needed to repair computers, printed circuit boards, peripherals and other electronic equipment. Vinyl case.



- 30 watt soldering iron and a desolder pump
 - 1 reel of solder and 3 soldering aid tools
 - Heat sink to protect parts
 - 4-1/2" diagonal cutter and 8" wire cutter/stripper
 - 5" needle nose pliers; 6" crescent wrench
 - 14 to 16-pin IC inserter, IC extractor and 3-claw part extractor
 - Regular tweezers and reverse-action tweezers
 - 3/16" and 1/4" screwdriver tips, #1 and #2 Phillips tips, 3/16" and 1/4" nutdriver tips, 1/8" flat screwdriver and #0 Phillips screwdriver
 - Spare parts tube
- TK-COM 3 lbs\$39.95

13-PIECE SOLDER TOOL KIT

Vinyl zip-close case keeps these soldering tools handy:

- 3 solder aid tools
- IC extraction tool
- Desolder pump
- UL-approved soldering iron
- Antistatic wrist strap
- Two IC inserters (14 to 16 and 24 to 48)
- Needle-nose pliers
- Diagonal cutter



TK-SOLDER 2 lbs\$34.95

CATALOG OUTLET

1238 S. BASCOM AVE. SAN JOSE, CA
(408) 559-7724 M-F 9-7, SAT 9-5, SUN 12-4

10-PIECE COMPUTER TOOL KIT

Compact repair kit has ten handy tools especially designed for PCs, all in a zippered vinyl case. Tools are demagnetized to prevent problems with your drives and diskettes.

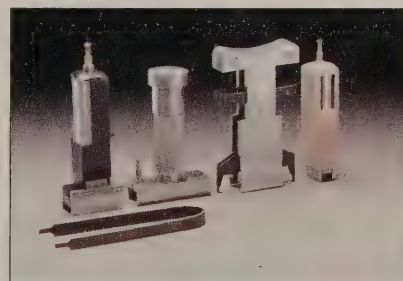


- 3-claw component holder
- IC extraction tool
- Assembly tweezer
- 2 blade screwdrivers, 2 Phillips screwdrivers and 1 Torx-type screwdriver
- 2 nut drivers (3/16" and 1/4")

TK-ELE 2 lbs\$19.95

IC INSERTION AND EXTRACTION KIT

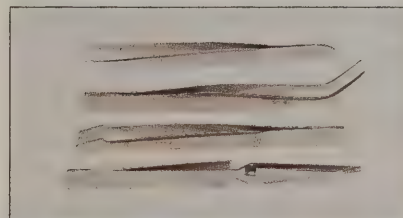
Tools for the safe insertion/extraction of CMOS DIP ICs from 8-40 pin sizes: extractors for 14-16 pin devices and 24-40 pin chips; inserters for 14-16, 24-28 and 36-40 pin ICs.



WK-7 1 lb\$69.95

TWEEZER KIT

This kit includes 4 different stainless steel tweezers for working with small hard-to-hold components. Ideal for prototyping and working in small spaces.



ATK-1 1 lb\$8.95

BATTERY POWERED WIRE-WRAP GUN

This dependable, convenient battery-powered wire wrap gun makes tight wire wrap connections quickly and easily. Lightweight design reduces fatigue.



- Modified wrap adds one full turn of insulation. Positive indexing. Anti-overwrap protection
- Wraps 30 AWG wire
- Designed for .025" square posts
- Requires two "C" batteries (not included)
- Includes bit and sleeve

BW-630 1 lb \$74.95

B2C-BP 1 lb \$7.95
NiCad "C" batteries (Pair)

CH4C3 2 lbs \$24.95
Fast 4-Cell Battery Charger



ASSORTED WIRE-WRAP WIRE

This handy assortment of wire wrap wire includes the most common lengths required for projects.



- Fully-insulated, plated 30 AWG wire is pre-cut and pre-stripped 1" on each wire end
- Assortment includes:
 - 500 pieces each of 3.0", 3.5" and 4.0"
 - 250 pieces each of 2.5", 4.5" and 5.0"
 - 100 pieces each of 5.5", 6.0", 6.5" and 7.0"

30AKIT2 1 lb \$44.95

PAGE PRECUT AND STRIPPED WIRE-WRAP WIRE



- Fully-insulated, plated 30 AWG wire is pre-cut, and pre-stripped 1" on each wire end
- See charts for lengths, quantities and colors

Note: A 2-1/2" length has only 1/2" of insulation (1" stripped at each end).

Part #	Length (in.)	Qty	Price
30x025C	2.5	100	2.70
30x025V	2.5	500	7.65
30x030C	3.0	100	2.70
30x030V	3.0	500	7.65
30x035C	3.5	100	2.85
30x035V	3.5	500	8.10
30x040C	4.0	100	3.05
30x040V	4.0	500	8.75
30x045C	4.5	100	3.20
30x045V	4.5	500	9.20
30x050C	5.0	100	3.35
30x050V	5.0	500	9.65
30x055C	5.5	100	3.65
30x055V	5.5	500	10.59
30x060C	6.0	100	3.90
30x060V	6.0	500	11.15
30x065C	6.5	100	4.05
30x065V	6.5	500	11.60
30x070C	7.0	100	4.20
30x070V	7.0	500	12.05
30x075C	7.5	100	4.35
30x075V	7.5	500	12.50
30x080C	8.0	100	4.50
30x080V	8.0	500	12.90
30x090C	9.0	100	4.90
30x100C	10.0	100	5.15

To Order: Select yellow(Y), red(R), blue(B), or black(K) insulation by replacing the "x" in the part # with Y, R, B, or K.

SOCKET ID WRAPS

Save time! These socket ID wraps enable you to identify pin numbers instantly. Plastic ID plates slip over IC socket pins on the wrap side of the board. Available in 8 to 40-pin sizes.

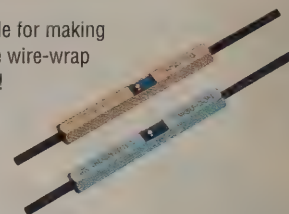


Pins	Pkg. of Price	Pins	Pkg. of Price
IDWRAP08	10 1.95	IDWRAP22	5 1.95
IDWRAP14	10 1.95	IDWRAP24	5 1.95
IDWRAP16	10 1.95	IDWRAP24SK	5* 1.95
IDWRAP18	5 1.95	IDWRAP28	5 1.95
IDWRAP20	5 1.95	IDWRAP40	5 1.95

*0.3" row spacing

HANDY WIRE-WRAP TOOL

Indispensable for making neat, reliable wire-wrap connections!



- Strips, wraps, and unwraps wire
- Designed for .025" square posts
- Designed for 30 AWG wire
- 4-1/2" long

WSU-30 1 lb \$16.95

WSU-30M 1 lb \$17.95
As above, wraps one extra turn of insulation

WIRE-WRAP SPOOLS

Stock up now on our fully-insulated solid 30 AWG wire-wrap wire on large spools for increased savings.



30Sx100 1 lb \$5.75
100 foot spool

30Sx250 1 lb \$9.95
250 foot spool

30Sx500 1 lb \$15.25
500 foot spool

30Sx1000 1 lb \$21.95
1000 foot spool

To Order: Select yellow(Y), red(R), blue(B), or black(K) insulation by replacing the "x" in the part # with Y, R, B, or K.

WIRE DISPENSER

Quickly cuts, strips and dispenses wrap wire from 3 separate spools.

- Includes three 50 ft. spools of 30 AWG wire (blue, white, and red) and pushbutton cutter



WD-30-TRI 1 lb \$18.99

R-30-TRI 1 lb \$13.95
Three 50-ft spools (blue, white, red) of 30 AWG wire

TECH TIP

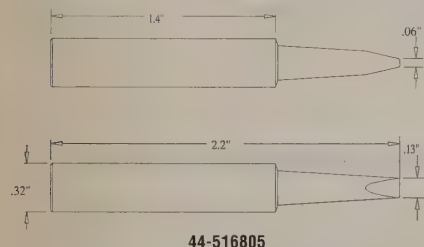
"Modified wire-wrapping involves placing an extra turn of wire on the wire wrap post. This extra turn includes the wire's insulation which adds strength to the connection. The modified wrap also reduces the change of shorts that occur as the result of an improper normal wrap." —R.B.

ORDER TOLL FREE
800-538-5000
24 HOURS A DAY

REPLACEMENT PARTS FOR SOLDER STATION 168-3C

28-169012 1 lb	\$.69
Replacement tip barrel	
42-169302 1 lb	\$.69
Replacement barrel nut	
78-484815 1 lb	\$1.99
Sponge	
SIA60KT/T 1 lb	\$29.95
Solder iron assembly	
79A168024-60K 1 lb	\$12.95
Cartridge heater	

REPLACEMENT TIPS FOR SOLDER STATIONS 168-3C AND XY999SD-A



44-516805

44-516801 1 lb	\$3.95
1/32" beveled solder tip	
44-516802 1 lb	\$3.95
1/32" blunt solder tip	
44-516803 1 lb	\$3.95
1/64" solder tip	
44-516804 1 lb	\$3.95
1/16" solder tip	
*44-516805 1 lb	\$3.95
1/8" solder tip	
44-516806 1 lb	\$3.95
3/64" solder tip	
44-641008 1 lb	\$4.95
.031" desoldering tip for XY999SD-A	
*44-641010 1 lb	\$4.95
.039" desoldering tip for XY999SD-A	
44-641012 1 lb	\$4.95
.047" desoldering tip for XY999SD-A	
44-641015 1 lb	\$4.95
.059" desoldering tip for XY999SD-A	
44-641020 1 lb	\$4.95
.079" desoldering tip for XY999SD-A	

*Note: Standard tip is included with original unit

"I would like to tell you how impressed I am with two of your employees...Both of them are excellent ambassadors of your company...I will now look forward to letting JDR Microdevices supply all of my company's computing parts needs."

—A.S.P.
Charlottesville, VA

OUR BEST-SELLING SOLDERING STATION!

Our soldering station has a ceramic handle for better thermal insulation, precise temperature controls and accurate heat sensing. The temperature regulation will reduce the possibility of traces lifting, making it ideal for printed circuit board applications.



Note: 1/8" solder tip included with unit

- 60 watts power
 - Adjustable temperature range, 200°-900°F
 - Power-on and heater-on temperature LEDs; Fahrenheit and Celsius gauge
 - 1/8" solder tip
 - 110 VAC, 50/60Hz
 - Includes solder-iron, iron-rest and cooling tray plus replaceable tip
- 168-3C 4 lbs \$79.95

CONDUCTIVE PEN

This handy pen lets you draw highly conductive traces on most surfaces--and it dries in just minutes!

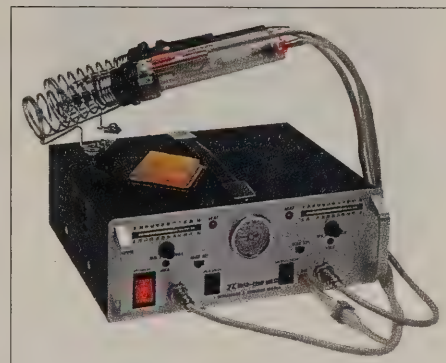


- Link components, repair defective traces, make smooth jumpers
 - Traces dry in minutes
 - Can be soldered at low temperatures
 - Pen holds approximately 100 ft. of material
 - Self-cleaning tip reduces mess
- PEN-2200 1 lb \$9.95
- PEN-3300 1 lb \$9.95
- Conformal Coating Pen
- EPOXY-2400 1 lb \$14.95
- Conductive epoxy

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TOP QUALITY SOLDER/DESOLDER STATION

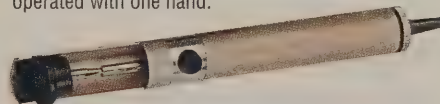
The essential solder/desolder station for professionals! Separate solder and desolder irons with finger controls and replaceable tips. Includes precise temperature controls, quick-heating elements and plenty of vacuum for desoldering.



- 60 watts power
 - Adjustable temperature range, 200°-900°F
 - Adjustable vacuum, 0-60cm/Hg
 - Oil-free vacuum pump and gauges
 - Temperature display in Fahrenheit and Celsius
 - 1/8" solder and 0.039" desolder tips
 - 110 VAC, 50/60Hz
 - Includes iron-rest, cooling tray, wire brush, tip cleaner rod and replaceable tip
- XY999SD-A 18 lbs \$399.95

DESOLDER PUMP

This convenient, inexpensive desolder pump provides suction precisely where needed. Easily operated with one hand.



- Disassembles for easy cleaning
 - Anti-static tip protects static-sensitive circuits
 - Nozzle cleaner included
 - Durable aluminum construction
- 1000AS 1 lb \$4.95

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TINNING BLOCK

Use this solid block of sal ammoniac to simultaneously clean and tin your soldering iron tip! The tip will not only last longer, but also make better solder connections. 1/2 lb. block.



SLDR51 Sh. wt. 1 lb\$2.69

LEAD-FREE SOLDER

95% tin/5% antimony alloy for metal repair (non-electronic) applications. Complies with Federal Standards regarding the use of solder in water drinking systems. Use with external flux. 1 oz.



SLDR527 Sh. wt. 1 lb\$1.49

TV/RADIO SOLDER

Ideal for TV and radio components and other electrical applications. 40% tin/60% lead alloy with Kester's "44" resin flux core (0.62" diameter). 1 oz.



SLDR327 Sh. wt. 1 lb\$1.19

SOLDER POCKET PAK™

Kester's Pocket Pak is a convenient, pencil-sized solder holder that dispenses 60% tin/40% lead alloy solder (0.031" dia.) with "44" resin flux core. .5oz.

SLDR8340 Sh. wt. 1 lb\$.99



KESTER KWIK-DRAW™

Dispenses 60/40, "44" resin flux core solder (0.050" dia.). 1.3 oz.

SLDR8330 Sh. wt. 1 lb\$1.49

COMPUTER/ELECTRONIC SOLDER

One ounce of 60% tin/40% lead alloy, with "44" resin flux. Low melting temperature (374°F) is ideal for circuit boards.

SLDR5055 Sh. wt. 1 lb.\$1.59



ELECTRONIC SILVER SOLDER

62% tin/36% lead/2% silver alloy; rosin flux core (.020" dia.) for soldering small, closely-spaced silver-coated components. 1 oz.

SLDR8371 Sh. wt. 1 lb\$3.39

SIL-STRONG® SILVER SOLDER

A 96% tin/4% silver solder for refrigeration, air conditioning, heating, plumbing and food service equipment. Ideal where high stresses and the need to avoid high heat excludes other solders. Melts at 430°F. Acid flux core eliminates the need for external flux. 1 oz.



SLDR6664 Sh. wt. 1 lb\$2.39

ALL-PURPOSE SOLDER

60% tin, 40% lead rosin core solder in 1 lb spools.

SLDR-025 1 lb 0.025" diameter\$9.95
SLDR-031 1 lb 0.031" diameter\$9.95
SLDR-050 1 lb 0.050" diameter\$9.95



DESOLDER WICK

SW-105 Sh. wt. 1 lb 1.5mm\$.99
SW-200 Sh. wt. 1 lb 2.0mm\$.99
SW-205 Sh. wt. 1 lb 2.5mm\$.99

SP44 ROSIN PASTE FLUX

Kester's highly active non-corrosive and electrically non-conductive flux has excellent wetting action. Ideal for electrical/electronic applications--permits soldering of difficult metals such as brass or nickel. 2 oz.



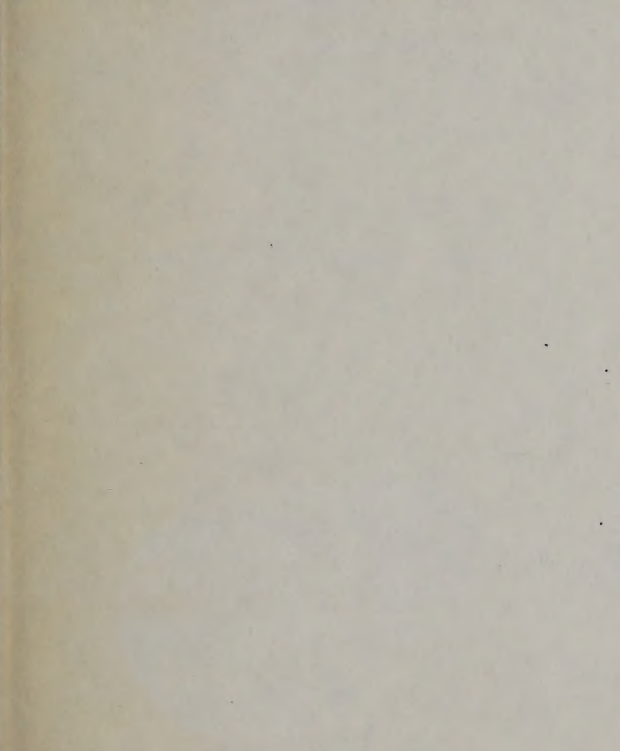
SLDR44 Sh. wt. 1 lb\$1.09

SOLDERING SIMPLIFIED

Kester's 16-page booklet, Soldering Simplified, provides detailed instructions and illustrations on how to make proper solder connections. Topics include how flux works, how to choose the proper solder, using the right amount of heat, etc.



SS111 Sh. wt. 1 lb\$.69



PORTABLE ELECTRIC DESOLDERING PUMP

This one-handed desoldering pump has a self-contained vacuum pump and heating element so there's no need for a separate iron and pump. 10-1/4" long; 115VAC, with .059" nozzle.



DSLD-115 2 lbs \$29.95
 DSLD-T1 1 lb .059" Replacement tip \$4.95
 DSLD-T2 1 lb .047" Replacement tip \$4.95

SOLDERING IRON

Our 7-1/2" soldering iron is ideal for precision work and general purpose soldering. Lightweight stainless steel barrel with 1-1/4" removable tip. 30 watt, 115V; U/L approved.



HA-4 2 lbs \$4.95

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SOLDERING IRON STAND

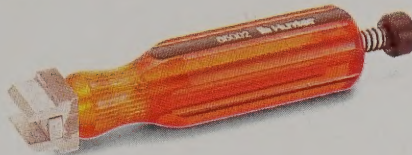
Holds hot soldering iron in a convenient position. Stable metal soldering iron stand has a cooling tray and sponge for easy cleaning.



TSH-007 1 lb \$3.95

IC INSERTION TOOL

Insert DIP ICs faster and reduce the number of bent pins! Simply place the device to be inserted in the tool, place over the socket and press. The tool aligns your pins and applies even pressure to the device. With fewer bent pins, you'll spend less time debugging your circuits! For use with 8 to 16-pin DIP devices.

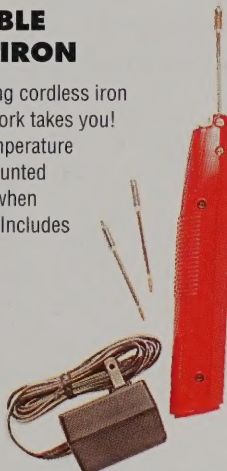


IC-INS 1 lb \$8.95

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RECHARGEABLE SOLDERING IRON

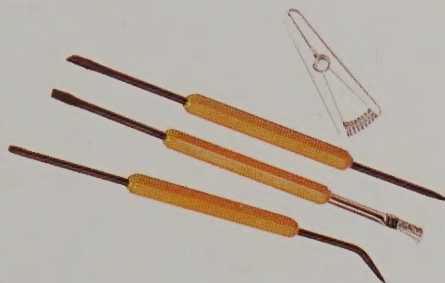
Lightweight, 6-3/4" long cordless iron goes wherever your work takes you! Reaches soldering temperature very quickly. Front mounted light comes in handy when soldering small parts. Includes AC charger pack and 3 replaceable tips.



RS-150 3 lbs \$29.95
 RS-150-RT 1 lb \$3.95
 Replacement tip

SOLDERING TOOL KIT

This kit has the specialized tools you need for soldering: a heat sink to protect your wiring or heat-sensitive devices, knife and brush tool, scraper and hook, fork and spike.



SA-2 1 lb \$4.95

IC EXTRACTOR

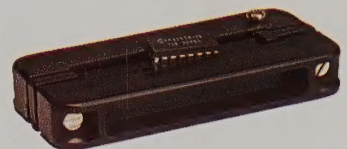
The IC-EXT extractor is ideally suited for the hobbyist and lab engineer alike. It extracts all DIP IC devices from 8 to 28 pins. One-piece spring steel construction.



IC-EXT 1 lb \$1.49

IC PIN STRAIGHTENER

This spring-loaded device quickly straightens bent IC pins for quick and easy insertion into their sockets. Accepts standard DIP IC's from 6-28 pins.



ICX-01 1 lb \$9.95

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PLCC EXTRACTOR

This spring-assisted chip extraction tool is specially designed for safe removal of PLCCs from sockets without damage to the components. Unique design reduces required effort. Hardened steel tongs, inserted at the socket corners, lift PLCC chips with a simple squeeze of the tool's grips.

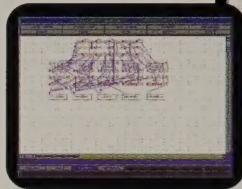


EXT-PLCC 1 lb \$19.95

New!

LOGICLAB EXPLORER

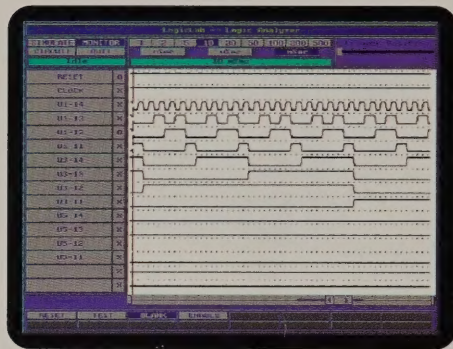
The LogicLab Explorer transforms your PC into a complete environment for "building," testing and simulating digital logic circuits. By giving you the simulated equivalent of a parts cabinet, a wire-wrap board and a logic analyzer, you can develop and test circuits without spending additional money. The software provides its own advanced windowing system to reduce the wire-wrapping process to simple point and click mouse operations. This easy-to-use software includes drop down menus, scrollable windows and on-line context sensitive help screens.



View your "circuit" from the component or wire-wrap side, and run live simulations with signal traces -- all without any hardware!

- Library includes most common 74LS and CMOS ICs
- Over 1000 ICs can be placed on a single wire wrap board
- LED and 7-segment displays light on-screen
- Includes programmable clock sources from 1ns to 500ms
- Logic analyzer includes 16 logic probes
- Each probe can be used to trigger based on state of transition
- Waveform display includes continuous monitor capability
- Includes on-line data sheets for supported ICs
- Requires EGA or VGA video adaptor

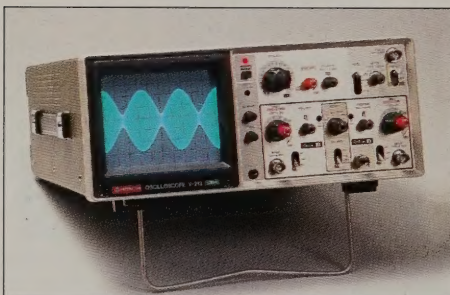
LOGICLAB 1 lb \$49.95



New!

HITACHI 20MHz OSCILLOSCOPE

Hitachi's 20MHz dual-trace oscilloscope makes circuit troubleshooting easy. Features include a bright 6" display, TV filters for viewing horizontal and verticle sync signals, high-impedance inputs and an easy-to-use front panel. The internal graticule improves measurement accuracy.



- DC to 20MHz maximum bandwidth
- 1mV/div sensitivity using x5 magnifier, 17.5ns rise time
- Two 1M ohm impedance channels plus Z-axis input
- Display modes include CH1, CH2 (normal or inverted), Alternate, Chopped and Added
- 0.2us/div to 0.2s/div timebase in 19 calibrated steps
- Auto, Normal, TV-H and TV-V trigger sources
- Internal, Line and External trigger sources
- 6" diagonal screen with P31 phosphor and internal graticule; two 10x probes included
- Input Power 110/220 VAC, 50/60Hz
- Size 5.2"H x 12.4"W x 14.8"D

V-212 15 lbs \$399.95



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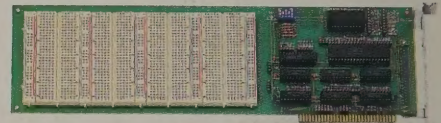
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- Easy connections using jumper wire or standard telephone hook-up wire

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PDS-611 2 lbs \$89.95
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PDS-600 2 lbs \$49.95
8-bit version without decode circuitry

PDS-610 2 lbs \$59.95
16-bit version without decode circuitry

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